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JOURNAL OF EDUCATIONAL RESEARCH

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JOURNAL *of* EDUCATIONAL RESEARCH

Volume XXXII MAY, 1939 Number 9

THE SYSTEMATIC STUDY OF TEACHING AND TEACHING EFFICIENCY[1]

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University of Wisconsin

I should like to begin this discussion by emphasizing the importance of the teacher in the learning-teaching situation and the need for more accurate information about teachers and teaching efficiency. Such a statement would scarcely seem necessary but this is a period of many emphases and sometimes very important matters get lost in the multitude of things emphasized. Everything considered, it would seem difficult to overstate the case for the importance of the teacher. Even within this age of the scientific study of education, Mark Hopkins' conception of the ideal school and the importance of the teacher appear yet quite pertinent. The teacher in a large measure makes the school. We hear much these days about the curriculum, and this is a very important aspect of education, but in last analysis it is the teacher who determines the curriculum in anything other than purely theoretical situations and it is the teacher who determines the effectiveness with which it is applied. Very much the same statement might be made relative to the materials of instruction: textbooks, supplies, and equipment; and to the socio-physical environment for learning. Next to the pupil, she is the most important single factor in the learning-teaching situation.

Considering the importance of the teacher there is a dirth of reliable information about her and the qualities essential to success in teaching. I should like to emphasize the need for more reliable information about the teacher. May I call attention, first of all, to the fact that many persons have come within recent years to recognize the necessity of limiting in some manner the number and types of persons entering the teaching professions? If this is to be done, and it seems that it should be done, more reliable information should be had as to the qualities essential to success

[1] Paper read at the (1939) Cleveland meeting of the American Education Research Association.

in teaching and the bases for choosing entrants into the teaching profession. I think it goes without saying that an important judgment of this sort should not arise from superficial observation, personal whims and fancies. There is also wide-spread and growing interest today in improved teacher education, both of the institutional sort and in the continued training of teachers in service. One of the problems that has received particular attention in this area is the curriculum for the training of teachers. A better choice of curricula and objectives for the training of teachers will be made possible when we possess more accurate information relative to the qualities essential to success in teaching. The same may be said relative to the choice, placement, and evaluation of teachers in service. The needs for information in this area are various and important.

In attempting to learn more about the teacher and the qualities essential to her success the writer has spent some several years studying the literature and practice in this field. From an examination of these it would seem fair to draw four conclusions:

(1) There is little agreement among the workers in the field of education relative to the qualities essential to success in teaching. It is, of course, possible to find two or more individuals who purport to agree upon certain qualities essential to success in teaching, but the agreement is not wide spread, and even when found is likely to be of a verbal or personal rather than of a scientific sort. The situation seems to be very much the same among educational theorists and practitioners alike.

(2) There is little agreement as to the amounts of these qualities that the teacher should possess to be a success in teaching. I suppose that most persons would agree that there are optimum limits within which the teacher should possess the different qualities considered essential to success in teaching, but what are the upper and lower limits? If there are compensating qualities, and there may be such, how may these effect these limits? etc. These limits may vary for different teachers, pupils, and subjects.

(3) There is little agreement as to the relative importance of the qualities considered essential to success in teaching. This lack of agreement is shown in many ways but frequently in discussions of the relative importance of knowledge of academic subject matter, professional education, and the native personal qualities of the teacher deemed essential to success in teaching. There are, apparently, wide differences of opinion

upon the importance of the different qualities considered essential to success in teaching.

(4) That the qualities considered essential to success in teaching are poorly defined. A point has frequently been made of this fact in the literature relating to educational supervision and the improvement of teaching.[2] Underlying various attempts at definition in this field is the choice of basic approaches to this problem. The qualities essential to success in teaching are sometimes defined in terms of traits, sometimes in terms of action patterns and sometimes in terms of essential knowledges, skills, and attitudes. I feel that this question is not merely one of academic disputation but one of practical concern, as I shall attempt to show shortly, to those who would like to improve the quality of those entering and continuing in the teaching profession.

Returning to the problem of the systematic study of the teacher and her efficiency I suppose it goes without saying that the qualities essential to success in teaching will need to be considered with reference to the purpose of education, and the sort of product desired. This obviously is not always done. For instance, if our desire is to have well-adjusted, wholesome personalities in pupils it is more than likely that we shall have to have teachers who possess these qualities and feel that they are important in others. The same may be said relative to a long list of other frequently repeated pupil objectives; such as, for example, the democratic way of living, social adjustment, worthy use of leisure time, problem solving ability, creative imagination, etc. Much of the current discussion of the qualities essential to success in teaching lacks a point of reference; what is expected of the teacher today in the way of specific classroom activities is for the most part merely the accumulation of frequently repeated statements about teaching based in many instances upon incidental personal observation and more or less doubtful educational assumptions. The profession is, of course, now in the process of sorting out, as far as possible, truth from fiction in this area, but much more needs to be done.

There is present in the literature of education today two basically different approaches to the systematic study of teaching. One we shall designate as a static approach, and the other as a functional or dynamic approach. In the static approach one measures qualities such as health,

[2] Barr, A. S., Burton, William H., and Brueckner, Leo J. *Supervision: Principles and Practices in the Improvement of Classroom Instruction.* D. Appleton-Century Company, 1938.

intelligence, professional knowledge, social adjustment, and integration divorced from the activities of teaching, in particular learning and teaching situations. In the dynamic or functional approach one concerns oneself with the teacher in action, that is, in specific learning and teaching situations, and sooner or later the static qualities of teachers do have to be translated into specific action patterns. Possibly the static approach to the study of teaching is unnecessary but it would appear to supply useful handles in certain areas, particularly in the pre- and post-training selection of teachers and in the segregation of qualities in need of special consideration in the training program. One of the lesser difficulties involved in the use of this approach arises from the fact that many of the measures of qualities commonly associated with teaching success have been designed for highly generalized situations and not with particular reference to teaching. This may be a virtue as well as a fault but possibly if we are to employ such measures in the study and improvement of teaching ability we should reconstruct them to contain content more akin to that found in teaching. Very little attention, for example, has been given to the problem of making judgments in concrete learning and teaching situations. There are, however, numerous and important judgments made by the teacher in the everyday work of teaching in both her planning and teaching activities. Very much the same thing might be said relative to other qualities commonly associated with teaching efficiency. If such reconstructed measures were available one would then have a close-up static over-view of the teachers assets and liabilities as a teacher. Reference is made here to this fact because teacher-rating scales and other instruments of evaluation frequently contain many items relating to the qualities of the teacher, per se, as distinguished from teacher behavior or activities.

Assuming that these static qualities of teachers are known I suppose it goes without saying that some measure of the teacher in action is desirable; when the teacher teaches she must always teach in some specific manner,—she stands or sits; she walks, talks, and uses verbal illustrations; she is constantly in action. What one sees when one studies the teacher at work are these specific physical and verbal activities. The problem of the supervisor, the educational theorist, and the teacher herself is to determine whether these activities employed in the classroom are the appropriate ones or not. This is a very important problem for the teacher and for those interested in the in-service training of teachers.

and I think it will become increasingly important for those responsible for the institutional training of teachers when those responsible for this training become interested in more than its theoretical aspects. To improve the teacher in action is, in last analysis, to improve the teacher choice and execution of specific teacher activities. These activities represent the meeting-point of theory and practice and if the theoretical considerations of teaching of either a personal, philosophical, or scientific sort are to contribute to anything more than a textbook knowledge of teaching, attention must be given to the means by which the gap between theory and practice is bridged. To leave this problem to the teacher, unaided, is probably not the best procedure; particularly, as long as there is some doubt about whether the gap can be bridged at all. The question raised here is not merely a practitioners' problem but one that lies at the roots and practicability of a science of education.

I should like to emphasize a bit further the importance of these two approaches to the study of teaching and to indicate some of the problems arising from their disassociation in theory and practice. For the most part, educational scientists and philosophers have been concerned with the static qualities of teachers and with generalized observations on teacher behavior stated in the forms of principles of learning of teaching. One must admit that this in itself constitutes quite an important undertaking but there is the further problem of the translation of these principles and qualities into specific learning and teaching procedures. Professor Charters[3] pointed out a number of years ago that it is not enough to know abstractly that one should be honest, but that one needs to know how to be honest in specific situations. Professor Charters was one of the first to call attention to this fact and to emphasize its importance in the teaching of ideals. His approach to this problem consisted of (1) the enumeration of desirable ideals or traits of character; as, for example, honesty, tact, considerateness, etc. (2) the collection of concrete situations involving application of these traits or ideals, and (3) the formulation of appropriate trait actions. While this work has been retarded because of certain theoretical questions involved, the approach does call attention to the importance of in some way effectively bridging the gap between theory and practice. The educational theorist may disclaim interest in the subject, if he prefers, but I can assure you that the problem is a very practical one for teachers, pupils, and supervisors alike and

[3] Charters, W. W. *The Teaching of Ideals.* New York: The Macmillan Company.

there can be no science of teaching, except in lecture halls and libraries, until this problem is solved.

To clarify the problem a bit further, may we examine two or three illustrative situations. Charters is concerned with the specific activities associated with the traits of character. Let us examine the relationship between traits of teachers and teaching. There is, of course, some question, at least in the minds of some psychologists, as to whether there are any generalized qualities in persons; such, for example, as intelligence, honesty, and emotional stability, but may we pass this issue by for the time being. Let us suppose that the teacher is at work in the classroom and a decision (judgment) must be made relative to some course of action, possibly a choice between two methods or teaching procedures or devices. How may the teacher make this decision and be reasonably certain that the decision is a good one; or how may the supervisor pass judgment upon the teacher's decision if he cares to do so and do so correctly? I suppose it is of little help now to know that the teacher's judgment is usually good or her emotional stability superb. The question rather is upon the correctness of this particular judgment. To judge of the correctness of this judgment one must bridge the gap between highly generalized traits and behavior in specific situations. Many educational scientists and theorists will prefer to approach the problem from the point of view of validated principles of learning and teaching, as for example, practice should be distributed, provisions should be made for individual differences, pupils should know their progress in learning, etc. The problem is that of the effectiveness of theoretical knowledge in particular learning and teaching situations. I presume that it is perfectly clear that it is not enough to merely say that practice should be distributed, that provisions should be made for individual differences, and that pupils should be acquainted with progress made in achieving the goals of instruction. Some one must say specifically what teachers and pupils do when they put these principles into operation. And if there is to be any science of education, or science of anything else for that matter, the choices involved must be based upon fact and validated relationships between principles and practice rather than upon personal whims and fancies. Consideration of the principles of approach would seem to indicate that four basic facts are involved in reaching correct judgments in such situations: (1) The questions of the universality of educational generalizations; few generalizations in the

field of education are universals, and may thus not apply to the specific situation under consideration, (2) The questions of appropriate and objectively defined applications of principle. If the principles of learning and teaching are to be properly applied in concrete learning and teaching situations it would appear that the nature of these applications would need to be most carefully defined. (3) The question of values. Sometimes to pursue one principle is to make it impossible to pursue another. It is sometimes difficult, for example, to be both tactful and honest, and (4) The question of residuals. It is sometimes said that each and every pupil, teacher, and learning-teaching situation is unique. This is obviously true, but it in no way conflicts with the scientific conception of education concerned as science always is, with the common elements found in otherwise unique situations. There are, however, residuals in each unique situation not included in the generalization of science that must not be overlooked. No science, however well developed, is likely to be all-inclusive. Pupils, teachers, and supervisors confronted thus with the necessity of making decisions in particular learning and teaching situations must somehow keep these several considerations in mind and come to the best possible decisions. The decision as to what to do in particular learning and teaching situations will depend, then, upon the principles of learning and teaching, limited by the peculiar needs of the situation at hand: (1) The needs of the pupils, (2) The particular idiosynerasies of the teacher, (3) The nature of the learning experience in progress, (4) The materials of instruction: textbooks, supplies, and equipment, and (5) The socio-physical factor effecting learning. The ultimate measure of the correctness of the decisions made will be found in the results achieved, or in whether the program works.

Before leaving this problem I should probably call attention to the fact that quite a few persons realizing the difficulties involved in the conventional approaches to the study and improvement of teaching efficiency described above have come to give more attention to the changes produced in pupils, measured with reference to the objectives of education as measures of teaching efficiency. In last analysis I suppose that that which works, broadly conceived, is best. Leaving out of consideration for the time the many technical problems involved in this approach, important as this approach to our problem is, it would appear most unfortunate, however, if correction had always to follow failure. Teaching without some sort of generalized knowledge or experience would thus

become a blind trial and error process. It has been the writer's purpose to study the relationship between these several approaches to the study and improvement of teaching.

With theoretical considerations such as these in mind may I refer briefly to the Wisconsin Study of Teaching Ability. Our study is of the intense case study sort involving the systematic study of some 2500 pupils and two hundred sixty rural school teachers of the social studies at the junior high school level. In order that the study might have a point of reference we have taken our departure from the purposes of education; in this instance, the objectives of social science instruction at the junior high school level. Tests have been given to both teachers and pupils and observations made of both at work. The tests to the teachers include some fifteen different measures of qualities commonly associated with teaching efficiency; such as, the teacher's intelligence, knowledge of subject taught, professional information, social adjustment, teacher-pupil relationships, cultural background, socio-economic status, and many similar qualities. The tests administered to the pupils include measures of intelligence, reading ability, and typical achievement outcomes including civic information, attitudes, problem solving, and behavior changes. The observational records consist of three typical rating scales twice applied to the teacher studied in the investigation and sound-records for two thirty-minute class periods for each of twenty teachers. The statistical analysis of the data, which is now in progress, will consist of a detailed study of the inter-relationships among the several measures employed in the investigation to throw light on two problems: (1) What are the qualities essential to success in teaching? and (2) What is the relationship, if any, among the several measures commonly employed in studying teaching efficiency? The data on this latter problem should throw some light upon the validation of current approaches to the study of teachers and teaching. It is hoped that the study may ultimately be of value to those interested in the improved selection and training of teachers.

SOME FACTORS AFFECTING TEACHING EFFICIENCY

FRANK YOUNG
East Texas State Teachers College

THE term curriculum includes all of the experiences which the school provides for its students to stimulate and promote learning on their part, and it requires good teachers, good textbooks, and good methods.

In recent years a number of splendid research studies treating factors relating to teaching efficiency have been published. No one can say, for sure, just exactly how one may determine the teaching efficiency of any teacher or group of teachers. There are many factors to be considered. Many of the studies which have been reported were based upon the general estimates of administrative officials. This method of evaluating teaching efficiency has been criticized adversely on the ground that it yields a very subjective and unreliable evaluation of the teacher's ability.

Two years ago, the writer made a study of some factors affecting Texas high school teachers' efficiency as measured by principals' ratings. A questionnaire form was sent to each high school teacher, and on this blank the following information was called for: (1) the principal teaching subject; (2) the total number of semester hours of earned college credit in the principal teaching subject; (3) the total number of semester hours earned college credit in education; and (4) the total number of years of teaching experience. After filling out the form, each teacher returned it to the principal, who in turn checked the blank as to accuracy, and rated the teacher as to teaching efficiency. The superior teacher was rated "A"; the average teacher, "B"; and the teacher below average, "C."

The rating given to the teacher by the principals, therefore, was used as the criterion of teaching success. It is recognized that such ratings are: (1) more or less subjective, that is, dependent more on the judgment of the principal than on objective evidence; and (2) relative to the particular school rather than on state-wide standards. This method assumes that the efficient teacher is the one judged to be good by his principal.

All teachers are rated. They are rated by the children, by the school board, by the patrons, by the supervisor, or by those in administrative positions. Barr and Burton assert that "rating in theory is sound and justifiable;" that "rating is an administrative matter and not a function of special supervision except on call or where expert advice is

needed;" they say: "There seems to be little doubt about the fact that the building principal usually shares or assumes the responsibility for rating. This seems to be entirely proper." In another instance they refer to the close connection between rating and the improvement of teaching efficiency.

It would seem, therefore, that, in spite of much criticism on the part of those who oppose rating as a means of measuring teaching efficiency, three facts stand out: (1) the number of towns and cities using rating as a means of evaluating the work of teachers is very much in the majority; (2) rating is an administrative as well as a supervisory matter; and (3) the building principal usually does the rating.

Returns from 1,521 teachers are included in the analysis here presented. For purposes of comparison six groups were studied: namely, English, industrial education and home economics, foreign language, mathematics, and social studies. For each of these groups correlations were made between subject matter training and principals' ratings, between semester hours training in education and principals' ratings, and between years of teaching experience and principal's ratings. Correlations were also calculated for the combined groups, *i.e.*, for the whole group of 1,521 teachers.

The results of this study were as follows:

(1) The teachers who hold higher degrees are rated higher than those who hold lower degrees; *i.e.*, M.A. graduates were rated higher than B.A. graduates, etc.

(2) The teachers who had had a large amount of training in subject matter in their field of specialization were rated higher than those who had had less training in their field of specialization.

(3) Likewise, the teachers who had had 24 or more semester hours training in courses in education were rated higher than those who had had less than 24 semester hours in education.

(4) According to the ratings given these 1,521 high school teachers, experience up to five years counts toward making one a more efficient teacher. Experience ceased to be a factor at that point. There was considerable improvement the first two years; slight improvement the next three years; no improvement from 5 to 20; some decline thereafter.

The successful completion of more than 24 semester hours of college credit in subject matter in one's teaching field, and the completion of more than 24 semester hours of college credit in education, combined

with teaching experience, tend to make one a more efficient teacher. The "A" teachers, as a group, had had more training in subject matter, more courses in education, and more experience than the "B" teachers; and "B" teachers, more than the "C" teachers; and the "C" teachers had had the least amount of training and experience.

May we conclude, then, that one who has had a great deal of training and some experience will be a good teacher? The answer is YES and NO—not as a rule. The combined effect, that is the correlation, of training and experience is not high enough to warrant the assumption that high specialization in subject matter in one's principal teaching field and in education, combined with teaching experience, guarantees teaching efficiency. For example: Of the 353 teachers who reported a master's degree, 48 were rated as "C" teachers, while 22 of the 79 teachers who were reported as holding *No degree* were rated as "A" teachers. One teacher who held a Ph.D. degree was rated as a "B" teacher, while in the same school, another who held no degree was rated as an "A" teacher. Teachers who had taught more than 20 years were generally rated lower than the group which had taught less than ten years. (Young teachers are generally given a higher rating than old ones.) Teachers of mathematics profit more from experience in teaching than any other group. Two years of college training in subject matter in mathematics seems to be about as effective as four years training. Probably some of the college mathematics taught on the upper level does not function for the high school teacher.

English teachers and teachers of foreign language profit most from high specialization.

Approximately twenty percent of the teachers who were reported as having had only one year of teaching experience were rated as "A" teachers. So that it is possible for a teacher to be an "A" teacher the first year he teaches.

It would appear quite unfair to base a salary schedule on training and experience alone. There are many other factors which should be considered when one attempts to evaluate the real worth of a teacher. Intelligence, emotional stability, scholarship, the habit of work, character, and personality are factors which are equally as important. Douglass considers intelligence the most important factor. Most of us need more of that will-to-do and more of that never-dying interest which has been so well described by William James in the following words:

"The total mental efficiency of a man is the resultant of the working together of all his faculties. He is too complex a being for any one of them to have the casting vote. If any one of them does have the casting vote, it is more likely to be the strength of his desire and passion, the strength of the interest he takes in what is proposed. If he really cares for a subject, he will return to it incessantly from his incessant wanderings and first and last do more with it, and get more results from it, than another person whose attention may be more continuous during a given interval, but whose passion for the subject is of a more languid and less permanent sort. This preponderance of interest, of passion, in determining the results of a human being's working life, obtains throughout. In almost any subject your passion for the subject will save you. If you only care enough for the result you will almost certainly attain it."

James believed that desire is the most important factor making for success. He insisted that the average man used only about one-tenth of his potential ability. He asserted that if we wished to be rich we could be rich, if we wished to be great we could be great, if we wished to be learned we could be learned. Only we must wish these things exclusively. He also insisted that habit inculcation is the aim of education; that the young man or woman who keeps on building good habits day after day and year after year need not be concerned about future success—that, if he kept it up long enough, he would "awake some fine morning to find himself numbered among the illustrious of his day and generation."

Evidently there are many, many factors which must be considered when one attempts to evaluate the efficiency of a teacher. College education is important; experience helps; but the mere possession of these in no way guarantees efficiency. The best teacher must be enthusiastic and must inspire those who sit in her classes. The mere possession of a college diploma is no sure indication that one is necessarily a student, that he is an efficient teacher, that he is thoroughly familiar with the materials of instruction, or that he uses good methods. The efficient teacher is the diligent teacher who goes about his work in a spirit of inquiry and humility. The assumption is that a teacher with much college training in subject matter, in education, and some experience is a better teacher than one lacking such training and experience. This study verifies this assumption.

The perfect teacher, then, is the teacher who has had this training and experience, and who also possesses the other qualities which are too subtle for accurate measurement.

PREDICTIVE VALUE OF VARIOUS TESTS OF EMOTIONALITY AND ADJUSTMENT IN A GUIDANCE PROGRAM FOR PROSPECTIVE TEACHERS[1]

J. E. GREENE and THOMAS F. STATON
University of Georgia

SCOPE OF THE STUDY

THE purpose of the study was to determine the predictive value of various tests of emotionality and adjustment in a guidance program for prospective teachers. To this end the following series of measures were obtained from each of 100 students enrolled in the College of Education of the University of Georgia: (a) twelve tests of emotionality and adjustment; (b) three tests of teaching aptitude; (c) four supplementary measurements.

Six of the 12 tests of emotionality and adjustment were sub-test scores obtained from the Bernreuter Personality Inventory, as follows: (a) Neuroticism; (b) Introversion; (c) Self-Sufficiency; (d) Dominance; (e) Sociability; (f) Self-Confidence. Five of the 12 tests of emotionality and adjustment were obtained from the Bell Adjustment Inventory, as follows: (a) Home Adjustment; (b) Health Adjustment; (c) Social Adjustment; (d) Emotional Adjustment; (e) Total Adjustment (that is, the sum of the four previous sub-tests). The Willoughby Emotional Maturity Scale was the twelfth measure employed in the series. The three tests of teaching aptitude employed were as follows: (a) George Washington University Teaching Aptitude Test; (b) Coxe-Orleans Prognosis Test of Teaching Ability; (c) Morris Trait L Index. Four measures supplementary to all of the above were utilized as follows: (a) scholarship marks (that is, median grades or marks on college courses to the time of testing); (b) intelligence test scores (obtained from the Ohio State University Psychological Examination, Form 18); (c) Wrenn's Study Habits Inventory (consisting of 30 items which purport to differentiate the study habits and study practices of *low* scholarship and *high* scholarship students); (d) Sim's Score Card for Socio-Economic Status (which is designed to differentiate between persons coming from homes of *high* or *low* socio-economic status).

[1] Mimeographed for distribution to the members of Section Q (Education), American Association for the Advancement of Science, Richmond, December 29, 1938.

PROCEDURE

The various tests listed above were administered by the senior author to one hundred students attending the College of Education of the University of Georgia. The administration and scoring of all tests conformed to the standard requirements indicated in the respective manuals. All tests were double-checked to insure accuracy in scoring. Zero-order coefficients of correlation were computed as follows: (a) intercorrelations among the several measures of emotionality and adjustment; (b) correlations between each of the 12 measures of emotionality and adjustment and each of three measures of teaching aptitude; (c) correlations between each of the 12 measures of emotionality and adjustment and four supplementary measures (school marks, intelligence, study-habits, socio-economic status); (d) intercorrelations among the several supplementary measures.

The total data described above were analyzed in an effort to obtain objective bases for answering questions:

1. How valid are the separate and combined measures of emotionality and adjustment?
2. Are the measures of emotionality and adjustment herein employed equally predictive throughout the entire range of scores?
3. Do the measures of teaching aptitude herein employed properly take into consideration the personality and adjustment of the prospective teacher?
4. In terms of the supplementary measures employed, to what extent are personality and adjustment scores predictive of (a) scholastic success, (b) intelligence, (c) efficient study habits, (d) socio-economic status?
5. Do significant interrelationships exist among the various supplementary measures?

SUMMARY OF FINDINGS

Tables I, II, III, and IV present data pertinent to the questions raised above. The data contained in the accompanying tables may be summarized briefly as follows:

1. *Intercorrelations Among the Several Tests of Emotionality and Adjustment.*—Of the 66 intercorrelations shown in Table I, 49 have complete statistical reliability. The average correlation of each test with each of the 11 remaining tests is shown in line 13 of Table I. Stated in

order of size, these average correlations are as follows: Neuroticism, −.39; Introversion, −.34; Total Adjustment, .30; Emotional Maturity, .26; Emotional Adjustment, .25; Self-Confidence, .24; Dominance, .23; Social Adjustment, .20; Home Adjustment, .19; Health Adjustment, .18; Self-Sufficiency, .04; Sociability, .01. If the dubious practice is followed of averaging correlation coefficients to obtain a generalized picture of the validity of a measure, it is noted that in no instance is a high validity coefficient obtained, and on certain of the measures extremely low coefficients are found.

As might be expected, the average correlations indicated above conceal as much or more than they reveal concerning the validity of particular sub-tests. Attention should be called to certain highly significant individual correlations found in Table I, as follows: Introversion and Neuroticism, .88; Self-Confidence and Neuroticism, −.85; Total Adjustment and Emotional Adjustment, .83; Dominance and Self-Confidence, .79; Neuroticism and Dominance, −.78; Self-Confidence and Introversion, −.72; Neuroticism and Emotional Adjustment, −.69. It should be noted that Sociability scores (obtained from one of the Flannagan scales of the Bernreuter Inventory) have uniformly low and generally unreliable correlations with the 11 additional tests of emotionality and adjustment.

TABLE I

INTERCORRELATIONS AMONG THE SEVERAL TESTS OF EMOTIONALITY AND ADJUSTMENT

Variable	1.**	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Neuroticism												
2. Introversion	.88											
3. Self-Sufficiency	—.45	—.31										
4. Dominance	—.78	—.59	—.45									
5. Sociability	—.01*	—.16*	—.07*	—.18*								
6. Self-Confidence	—.85	—.72	.53	.79	.11*							
7. Home Adjustment	—.38	—.33	.01*	.46	.14*	.36						
8. Health Adjustment	—.48	—.39	.04*	.30	.29	.39	.23*					
9. Social Adjustment	—.51	—.42	.21*	.61	.14*	.21*	.22*	.23*				
10. Emotional Adjustment	—.69	—.64	.27	.62	—.19*	.61	.56	.53	.46			
11. Total Adjustment	—.62	—.66	.25	.62	.12*	.62	.46	.55	.62	.83		
12. Willoughby E M Scale	—.37	—.36	.38	.55	.07*	.56	.36	.26	.39	.44	.55	
13. Average Correlation	—.39	—.34	.04	.23	.01	.24	.19	.18	.20	.25	.30	.26

* Unreliable correlations are indicated by an asterisk.
** See list of variables in left-hand column of table.

In general summary of the data in Table I, it may be said that although the validity coefficients of the various tests of emotionality and

TABLE II

CORRELATIONS BETWEEN TWELVE MEASURES OF EMOTIONALITY AND ADJUSTMENT AND THREE MEASURES OF TEACHING APTITUDE

Tests of Emotionality and Adjustment	George Washington University Teaching Aptitude Test	Coxe-Orleans Prognosis Test of Teaching Ability	Morris Trait Index L
Bernreuter Inventory			
Neuroticism	—.02	—.09	—.10
Introversion	—.03	.01	—.04
Self-Sufficiency	.32*	.35*	.22
Dominance	.01	.09	.07
Sociability	—.44*	—.40*	—.17
Self-Confidence	—.12	.16	.24
Bell Inventory			
Home Adjustment	.00	.03	.22
Health Adjustment	.05	.11	.26*
Social Adjustment	—.10	.07	.07
Emotional Adjustment	.17	.26*	.20
Total Adjustment	—.01	.34*	.34*
Willoughby E. M. Scale	.12	.26*	.13
Average of 12 Correlations	.00	.10	.12

* Reliable Correlations.

adjustment are not sufficiently high to permit of a high degree of accuracy in individual diagnosis, several of the tests appear to have sufficiently high validity to be useful in making group differentiations. It should be mentioned also that the writers have data available (although space limitations preclude its detailed presentation here) which indicate rather conclusively that the various tests of emotionality and adjustment are considerably more valid for persons making extremely favorable or extremely unfavorable scores than for those making average scores.

II. *Relation of Teaching Aptitude to Emotionality and Adjustment.* —Inspection of Table II reveals that only nine of the 36 correlations between the three tests of teaching aptitude and the twelve measures of emotionality and adjustment are statistically reliable. The average correlation between each of the measures of teaching aptitude and the 12 measures of emotionality and adjustment are as follows: (a) George Washington University Teaching Aptitude Test, .00; (b) Coxe-Orleans Prognosis Test of Teaching Ability, .10; (c) Morris Trait Index L, .12. The correlations between the George Washington University Teaching Aptitude Test and the 12 measures of emotionality and adjustment range from —.44 (Sociability) to .32 (Self-Sufficiency). The corresponding range in correlations on the Coxe-Orleans Prognosis Test of Teaching

Ability is from −.40 (Sociability) to .35 (Self-Sufficiency). On the Morris Trait Index L Test the corresponding range is from −.17 (Sociability) to .34 (Total Adjustment). The uniformly inverse relationships found between teaching aptitude and sociability are the most suggestive and statistically significant findings reported in Table II. It is obvious that none of the three tests of teaching ability has consistently high or reliable correlations with most of the tests of emotionality and adjustment.

TABLE III

CORRELATIONS BETWEEN TWELVE MEASURES OF EMOTIONALITY AND ADJUSTMENT AND (A) SCHOOL MARKS, (B) INTELLIGENCE, (C) STUDY-HABITS, (D) SOCIO-ECONOMIC STATUS

Tests of Emotionality and Adjustment	School Marks	Intelligence (Ohio-Form 18)	Study-Habits Inventory (Wrenn's)	Socio-Economic Status Inventory (Sim's)
Bernreuter Inventory				
Neuroticism	—.01	—.03	—.32*	—.16
Introversion	—.03	—.04	—.41*	—.11
Self-Sufficiency	.30*	.32	.21	.01
Dominance	.03	.02	.20	.16
Sociability	—.35*	—.33*	.05	.14
Self-Confidence	.07	.13	.41*	.16
Bell Inventory				
Home Adjustment	.01	—.06	.08	.19
Health Adjustment	.05	—.04	.45*	—.11
Social Adjustment	—.03	.04	.22	.17
Emotional Adjustment	.05	—.02	.42*	.00
Total Adjustment	.03	.01	.38*	.10
Willoughby E. M. Scale	.18	.22	.36*	.03
Average of 12 Correlations	.03	.02	.17	.05

* Reliable correlations.

It can only be concluded that the tests of teaching aptitude herein employed measure traits relatively independent of those measured by ten of the 12 tests of emotionality and adjustment. On the dubious assumption that the tests herein employed are valid measures of the traits in question, it is clear that teaching aptitude is relatively independent of emotionality and adjustment. The present data (together with supplementary data derived from educational philosophy, experiences of supervisors, etc.) indicate rather conclusively that the teaching aptitude tests do not adequately take into account the idiosyncrasies of personality commonly believed to be related to success in teaching.

III. *Relationship of Personality and Adjustment Scores to* (*a*)

Scholastic Marks, (b) Intelligence, (c) Study-Habits, and (d) Socio-Economic Status.—Of the 48 correlations involved in this section of the data (Table III) only 11 have complete statistical reliability. The average correlations obtained between the four supplementary measures employed and the 12 tests of emotionality and adjustment are as follows: school marks, .03; intelligence, .02; study-habits, .17; socio-economic status, .05. The correlations between scholastic marks and the 12 tests of emotionality and adjustment ranged from −.35 (Sociability) to .30 (Self-Sufficiency). These are the only two statistically reliable correlations found, and neither of these has any considerable predictive significance. The correlations between intelligence and the 12 measures of emotionality and adjustment range from −.33 (Sociability) to .32 (Self-Sufficiency). Among prospective teachers there appears to be a slight but statistically reliable tendency for intelligent people to be self-sufficient and lacking in sociability. The correlations between study-habits and the 12 criterion tests range from −.41 (Introversion) to .45 (Health Adjustment). That is, among prospective teachers efficient study habits are positively and reliably associated with good health adjustment, but inversely and reliably associated with introvertive tendencies. Socio-economic status shows a corresponding range in correlations with the twelve criterion measures from −.16 (Neuroticism) to .19 (Home Adjustment). Although neither of these coefficients is reliable, they indicate a slight trend for persons of superior socio-economic status to have low Neuroticism scores and high Home Adjustment scores.

Although most of the correlations reported in Table III are too slight and too unreliable to have appreciable predictive significance, several of them appear to have considerable value as aids in a guidance program for prospective teachers. (For example, see above findings on Sociability and Self-Sufficiency.)

IV. *Intercorrelations Among the Various Supplementary Measures.*—Of the 21 correlations shown in Table IV, 12 have complete statistical reliability. The average of the intercorrelations, stated in order of size, are as follows: Coxe-Orleans Prognosis Test of Teaching Ability, .45; scholastic marks, .43; Ohio State University Psychological Examination, .40; George Washington University Teaching Aptitude Test, .33; Morris Trait Index L, .33; study habits, .18; socio-economic status, .01.

It is obvious that Coxe-Orleans scores have more in common, and that Socio-Economic Status scores have less in common, with the other sup-

TABLE IV

INTERCORRELATIONS AMONG THE SEVERAL SUPPLEMENTARY MEASURES

Variable	1**	2	3	4	5	6	7	Av. of Tests 1-3
1. Coxe-Orleans								
2. Geo. Washington U.	.60							
3. Morris Trait Index L	.52	.37						
4. School Marks	.66	.40	.46					.51
5. Intelligence	.69	.47	.38	.65				.51
6. Study-Habits	.32	.10*	.20*	.40	.21*			.21
7. Socio-Economic Status	—.08*	.06*	.06*	—.01*	.01*	—.16*		.01
8. Average Correlation	.45	.33	.33	.43	.40	.18	.01	

* Unreliable correlations are indicated by an asterisk.
** See list of variables in left-hand column.

plementary tests than do any of the other measures employed. If the average correlations are computed between the three tests of teaching ability and each of the four additional variables used in Table IV, the following average correlations are obtained: scholastic marks, .51; intelligence, .51; study habits, .21; socio-economic status, .01. It is clear from the above findings that the three measures of teaching aptitude have considerable in common with intelligence and with marks, but have little in common with study-habits or socio-economic status. It appears from the present data and from the data indicated in Section III, above, that the tests of teaching ability herein employed are, to an appreciable extent, measures of intelligence and scholastic achievement. The use of these tests of teaching aptitude in a guidance program for prospective teachers should be supplemented by valid tests of other traits equally, or even more significantly, related to teaching efficiency.

ARE SECONDARY SCHOOL ATHLETICS AND PUBLICATIONS SELF-SUPPORTING?

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A sound business enterprise must of necessity operate on a balanced budget. To do otherwise means receivership, bankruptcy, or other undesirable action unless necessary funds are forthcoming. The operation of the public schools represents one of the biggest enterprises in any state and as such involves large amounts of money.

The regular budget involving expenditures in Pennsylvania is to be carefully prepared. Even though it must not be approved in advance, Act 157 passed at the last session of the Legislature specifically prescribes reviewing the budgets of the various districts as one of the major duties of the county superintendent and the county board of education.

Section 2601 of the School Laws of Pennsylvania makes it mandatory to audit all the accounts and to file one copy with the Superintendent of Public Instruction. Section 317 also makes provision for the annual financial report to the Superintendent of Public Instruction. These two reports include only those expenditures from monies derived through taxation. It takes no recognizance of school activities financed by other means.

Extra-class activities represent an important phase of education and provide some opportunities whose educational benefits are more productive than certain formalized activities provided in a tax supported curriculum, because generally these activities approach activities in the outside world more closely. These activities are so widely accepted that it is not within the confines of this treatise to establish their justification.

The enormous expenditures voluntarily contributed in secondary schools to augment the regular school budget need nevertheless be operated on a sound basis. School laws definitely prohibit expenditures for certain activities unless they are definitely a part of the program.

The voluntary desire to enrich the activities of the school through the extra-class activity budget needs careful scrutinization because (1) it represents sound business practices, (2) enthusiasm to carry on certain accepted activities may cause expenditures to exceed income, (3) certain activities may involve an inequitable distribution of expenditures between various activities, and (4) in some cases Mark Twain's facetious remark

that "balance the budget even if you have to borrow money to do it" is actually practiced.

There is no provision in the law requiring auditing of extra-curricular activities but may schools do so.

THE PROBLEMS

The writer in a rather comprehensive study determined as one of the phases the relationship between income and expenditures for activities. Financial reports of activities on a form presented by the writer were obtained for the school year 1935-1936 by a careful sampling of school districts throughout the Commonwealth.

The schools studied were determined by selected samples so that the enrollments of the secondary schools included in this study were distributed similar to the enrollments of the secondary schools in all districts of the Commonwealth. They were likewise selected so that the proportion of four-year secondary schools, senior high schools, and junior-senior high schools were in the same proportion as for the State as a whole.

It was found after some experimentation that secondary schools with enrollments below 250 pupils did not represent a diversified program and were eliminated from the study. This study was limited to those schools with enrollments of 250 or more pupils and including 26.5 percent of the four-year secondary schools, 21.4 percent of the junior-senior high schools and 40.0 percent of the senior high schools, this latter figure was higher because senior high schools represented only 5.4 percent of all the secondary schools throughout the State.

The problems treated in this particular study are (1) the ratio of expenditures to income for (a) all athletics, (b) football, (c) and basketball; (2) the ratio of expenditures to income for (a) all publications, (b) the newspaper, and (c) the annual. In each specific activity school districts were requested to indicate practices in case of a deficit for its removal.

The first phase of this study is devoted to athletics with specific emphasis on football and basketball, the two sports most frequently found in secondary schools. In all subsequent treatment practices are determined according to type of organization and according to enrollments. Organizations studied were the four-year secondary school including Grades IX-XII, junior-senior high schools comprising Grades VII-XII, and senior high schools having Grades X-XII. Other types of organizations were excluded. The enrollment groups were secondary schools with

enrollments of 250-499 pupils, 500-749 pupils, 750-999 pupils and schools enrolling 1,000 or more pupils.

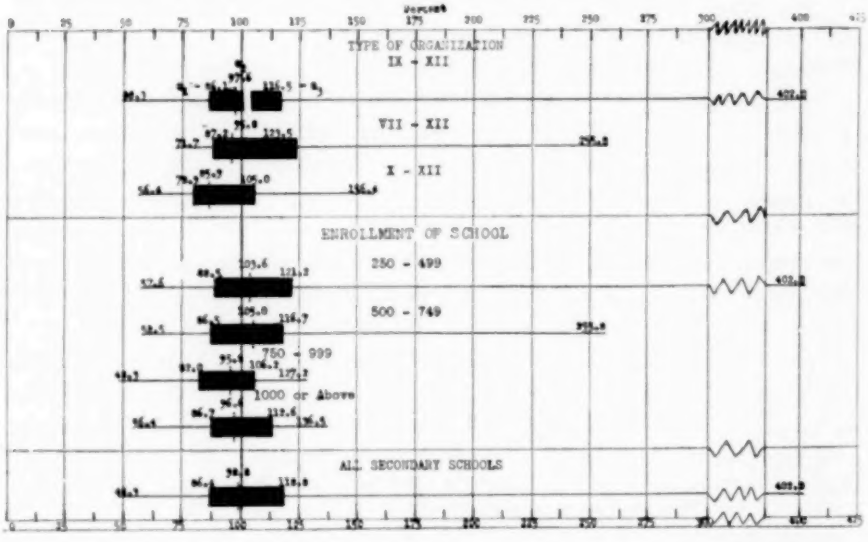
PART I. ARE ATHLETICS SELF-SUPPORTING?

Chart I and Table I show the distribution of the schools in terms of the ratio of expenditures to income for athletics according to the categories previously mentioned.

It is evident that regardless of type of organization or enrollment that an appreciable number of the schools exceed the income. Consider-

CHART I

THE DISTRIBUTION OF THE PERCENT EDUCATIONAL EXPENDITURES FOR ATHLETICS WERE OF INCOME FROM THIS SOURCE AS REVEALED BY CERTAIN POINT MEASURES IN SECONDARY SCHOOLS ACCORDING TO TYPE OF ORGANIZATION OR ENROLLMENT DURING THE SCHOOL YEAR 1935-1936



Read chart thus: In four year secondary schools when comparing athletic expenditures with income from the same source and expressing the ratio in terms of percent, the lowest ratio was 48.3 percent of the income; one-fourth of these schools spent 86.1 (Q_1) percent or less; half of these schools expended 101.3 (Q_2) percent or more; one-fourth exceeded the income by at least 116.5 (Q_3) percent; and the greatest excess of expenditure over income was 402.0 percent.

ing four-year secondary schools in one-fourth of these schools the expenditures exceed the income by 116.5 percent or more (Chart I) and only 51.1 percent of these schools (Table I) operated on a balanced budget. In one school the expenditures were 402.0 percent of the income.

TABLE I

PERCENT OF CERTAIN SECONDARY SCHOOLS IN PENNSYLVANIA WHOSE INCOME EXCEEDED EXPENDITURES IN VARIOUS ATHLETIC ACTIVITIES DURING THE SCHOOL YEAR 1935-1936

Enrollment or Type of Organization	No. of Districts	All Athletics	Football	Basketball
IX-XII	47	51.1	51.5	71.8
VII-XII	43	53.5	56.7	61.8
X-XII	17	64.7	80.0	80.0
250-499	47	42.6	48.4	70.0
500-749	24	58.3	41.1	72.2
750-999	13	69.2	77.8	70.0
1000 or Above	23	56.5	81.0	65.0
All Types of Schools	107	60.2	59.0	69.3

According to type of organization the senior high schools seemed best able to finance athletics. The income in 64.7 percent of these schools equaled or exceeded the expenditures.

Considering secondary schools according to enrollment those enrolling 750-999 pupils seemed to be most proficient in financing the program regardless of the point measure considered in Chart I, the lowest ratio being 48.3 percent, the lower quartile point, the median, the upper quartile point and the highest being 82.0 percent, 95.8 percent, 106.2 percent, and 127.2 percent respectively. Table I reveals that 69.2 percent of this enrollment group operated on balanced budgets.

As a group, secondary schools with enrollments between 250-499 seemed to have the greatest difficulty financing the program. One school in this group spent $4.02 for every dollar of income and one-fourth of these schools expended $1.21 or more for every dollar of income even to the point that according to Table I only 42.6 percent of the schools had incomes exceeding expenditures.

It would appear that schools should have enrollments of at least 500 pupils when considering the criterion of ability to finance the athletic program and assuming athletics as worthwhile activities. This is an additional point in considering desirable attendance areas for secondary schools. On the surface, senior high schools seem most capable of financing the program although the reader should bear in mind that junior high schools probably aided in its success.

FOOTBALL

Football as far as financing is concerned seems to present fewer financial difficulties than the athletic program in general although Chart I re-

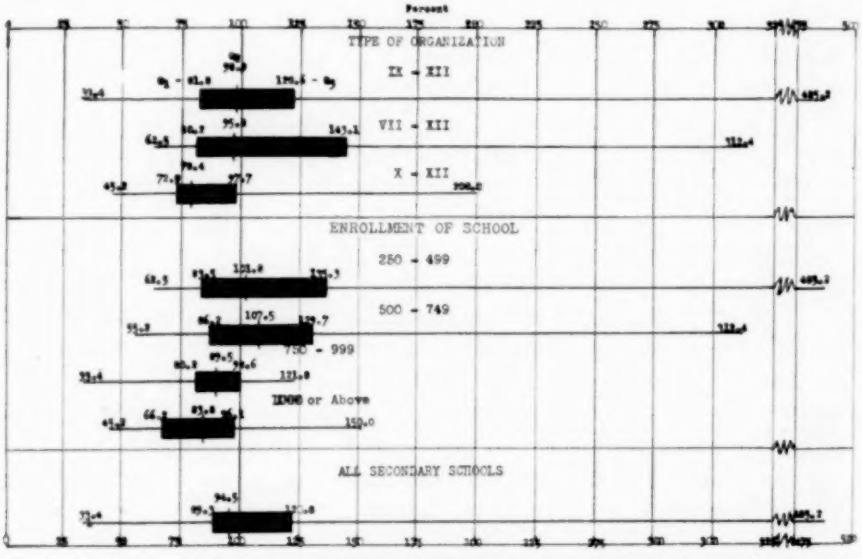
veals many schools operating at a financial loss especially of the IX-XII and VII-XII types and those with enrollments of 250-499 and 500-749 in which cases twenty-five or more percent of the schools in these categories exceed the income derived. A four-year secondary school having an enrollment of 250-499 had expenditures totaling 485.2 percent of the income.

Table I shows that eighty percent of the senior high schools were able to operate without a deficit, likewise 77.8 percent of schools with enrollments between 750-999, and 81.0 percent of schools enrolling 1,000 or more pupils.

It should be observed that 41.1 percent of the schools or approximately four of every ten schools enrolling 500-749 pupils and 48.4 percent or about half of the schools enrolling 250-499 pupils operated within their income.

CHART II

THE DISTRIBUTION OF THE PERCENT EDUCATIONAL EXPENDITURES FOR FOOTBALL WERE OF INCOME FROM THIS SOURCE AS REVEALED BY CERTAIN POINT MEASURES IN SECONDARY SCHOOLS ACCORDING TO TYPE OF ORGANIZATION OR ENROLLMENT DURING THE SCHOOL YEAR 1935-1936



Read chart thus: In four year secondary schools when comparing football expenditures with income from the same source and expressing the ratio in terms of percent, the lowest ratio was 33.4 percent of the income; one-fourth of these schools spent 81.8 (Q_1) percent or less; half of these schools expended 98.9 (Q_2) or more; one-fourth exceeded the income by at least 120.6 (Q_3) percent; and the greatest excess of expenditure over income was 485.2 percent.

As a group the schools with enrollments of 500-749 pupils had the greatest difficulty maintaining football without a loss. This is probably due to the fact that these schools attempted to ape after the larger schools when scheduling games, supplying equipment, and maintaining athletic fields. The fact remains that they cannot draw as many spectators and so probably continue even though threatened with a deficit.

It is very doubtful whether a corporation would permit so many of its plants to operate at a loss, although the analogy may be inappropriate inasmuch as football is demanded by the community which is willing to wipe out the deficit by other means.

According to these data it appears that football as carried on in schools with enrollments below 500 is a very great financial liability. It would appear that these schools should be operating within a more restricted budget or substitute a sport more in keeping with the purse-strings. This same inference applies to one-fourth of the schools enrolling 750 or more pupils.

BASKETBALL

Basketball as a financial project according to Chart III seems a more desirable sport than football except in senior high schools and schools with enrollments of 750-999 pupils and 1,000 or more pupils. One-half of the schools enrolling 750-999 pupils had expenditures totaling 83.3 percent of the income in basketball as compared with 89.5 percenf in football, (Chart I.) Likewise, one-fourth had expenditures in basketball and football of at least 106.2 percent and 98.2 percent of the income respectively.

One-fourth of the schools enrolling 1,000 or more pupils had expenditures of 116.7 percent or more of the income in basketball as compared with only 96.1 percent in football.

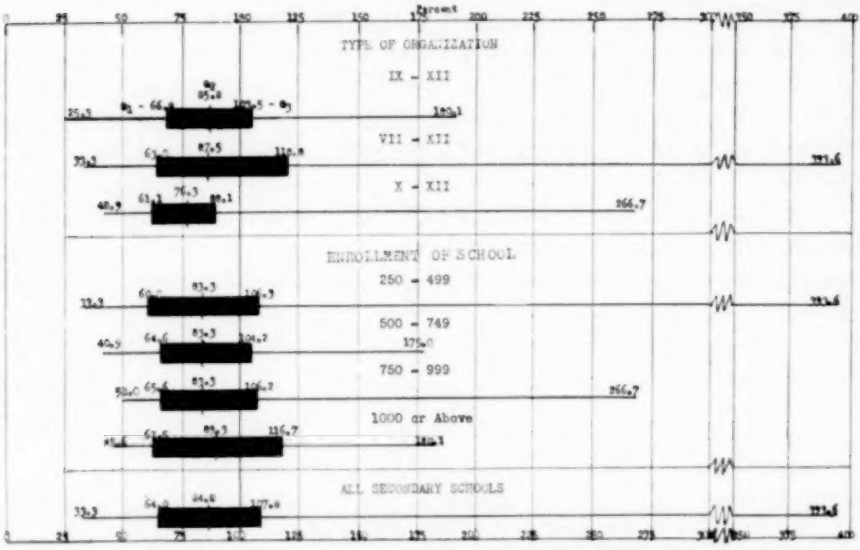
Table I reveals that about as many schools operated on a balanced budget regardless of enrollment although the greatest percentage occurred in the 500-749 group in which 72.2 percent accomplished this task. Schools enrolling 1,000 or more pupils made the poorest showing with 65.0 percent attaining this goal. Seventy percent of the schools enrolling 250-499 pupils and 750-999 pupils financed basketball without a deficit.

PROCEDURES TO ELIMINATE DEFICITS

The districts reporting how deficits were removed in football and basketball mentioned a school board grant in fifty percent of the cases

CHART III

THE DISTRIBUTION OF THE PERCENT EDUCATIONAL EXPENDITURES FOR BASKETBALL WERE OF INCOME FROM THIS SOURCE AS REVEALED BY CERTAIN POINT MEASURES IN SECONDARY SCHOOLS ACCORDING TO TYPE OF ORGANIZATION OR ENROLLMENT DURING THE SCHOOL YEAR 1935-1936



Read chart thus: In four year secondary schools when comparing basketball expenditures with income from the same source and expressing the ratio in terms of percent, the lowest ratio was 25.3 percent of the income; one-fourth of these schools spent 66.9 (Q_1) percent or less; half of these schools expended 85.8 (Q_2) or more; one-fourth exceeded the income by at least 103.5 (Q_3) percent; and the greatest excess of expenditure over income was 393.6 percent.

in football and in thirty-six percent of the cases in basketball. The next most frequent method mentioned for football was a previous balance in twenty-three percent of the districts. The remaining methods mentioned with equal frequency were "other activities," "plays, carnivals, etc.," and "deficit carried to a later year."

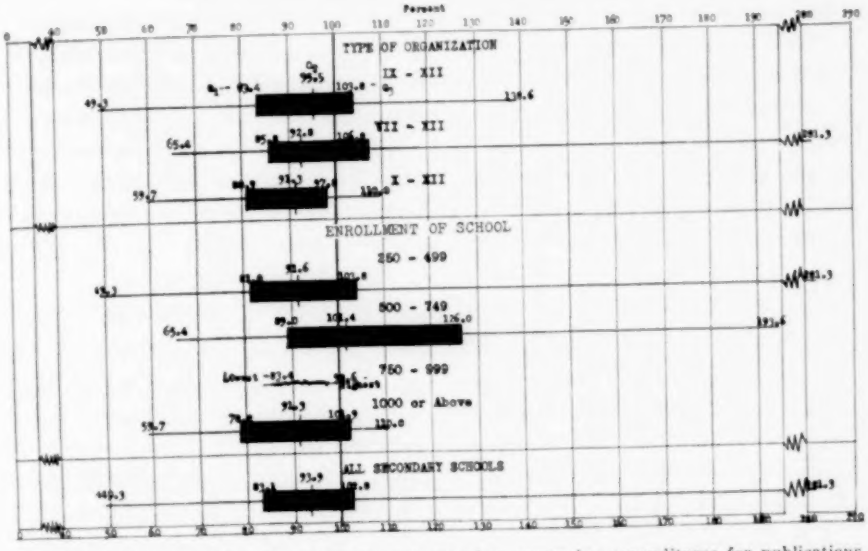
Other methods employed to remove basketball deficits were "football" and "previous balance"—11.1 percent respectively; "other activities," "plays, carnivals, etc.," and "carried to a later year"—5.0 percent; and "other sports" and "socials, candy sale, etc.,"—2.5 percent.

INFERENCES AND CONCLUSIONS CONCERNING FINANCING ATHLETICS

1. It seems apparent that a surprising number of schools maintain athletic activities at a loss, football being the greatest financial risk in schools enrolling 500 or less students.

CHART IV

THE DISTRIBUTION OF THE PERCENT EDUCATIONAL EXPENDITURES FOR PUBLICATIONS WERE OF INCOME FROM THIS SOURCE AS REVEALED BY CERTAIN POINT MEASURES IN SECONDARY SCHOOLS ACCORDING TO TYPE OF ORGANIZATION OR ENROLLMENT DURING THE SCHOOL YEAR 1935-1936



Read chart thus: In four year secondary schools when comparing expenditures for publications with income from the same source and expressing the ratio in terms of percent, the lowest ratio was 49.3 percent of the income; one-fourth of these schools spent 83.4 (Q_1) percent or less; half of these schools expended 95.5 (Q_2) percent or more; one-fourth exceeded the income by at least 103.8 (Q_3) percent; and the greatest excess of expenditure over income was 138.6 percent.

TABLE II

PERCENT OF CERTAIN SECONDARY SCHOOLS IN PENNSYLVANIA WHOSE INCOME EXCEEDED EXPENDITURES IN VARIOUS PUBLICATIONS DURING THE SCHOOL YEAR 1935-1936

Type of Organization or Enrollment	No. of Schools	Publication		
		All Types	Newspaper	Annual
IX-XII	33	63.6	80.5	60.9
VII-XII	34	62.7	72.0	68.4
X-XII	11	66.7	63.2	57.1
250-499	31	67.7	75.3	50.0
500-749	20	46.7	62.2	63.6
750-999	8	75.0	85.5	71.4
1000 or Above	19	70.2	83.7	76.9
All Schools	78	63.6	74.4	63.3

2. According to the data schools should enroll 750 or more pupils before football can be successfully financed. Smaller schools should consider seriously curtailment of football or substitution of less expensive fall sports.

3. Basketball is a sport financed about as readily in schools enrolling 250-749 pupils as in schools with enrollments exceeding this number.

4. School boards seem ready to wipe out deficits even though the practice is illegal, it being permissible by law when the expenditure is for physical education. It may be that the law should be amended to make grants legal since communities seem to approve such practices. It does present a problem worthy of serious thought when it is so difficult to raise funds to support a program to properly serve the needs, interests, and capacities of pupils under existing conditions.

PART II. ARE SECONDARY SCHOOL PUBLICATIONS SELF-SUPPORTING?

Part I portrayed the ability of secondary school athletics with special emphasis on the two most frequent sports, namely, football and basketball. Part II will treat secondary school publications in general with special treatment of the school newspaper and the annual, these latter two appearing in schools more widely than the magazine or the annual. Comparisons in this part are made according to the three major types of organization, Grades IX-XII, VII-XII, and X-XII, and four enrollment groups, 250-499, 500-749, 750-999, and 1000 or above.

ALL PUBLICATIONS

The ratio of expenditures to income for publications according to type of organization and school enrollments is illustrated in Chart IV and Table II.

Comparisons of Chart IV and Chart I reveal that publications are self-supporting to a greater extent than athletics. This is true in every case save the upper middle fifty percent of schools enrolling from 500-749 pupils in which case Q_1 and Q_3 for publications and athletics are 89.0 and 126.0 percents and 86.5 and 116.7 percents. Considering all secondary schools, point measures for publications and athletics are summarized below:

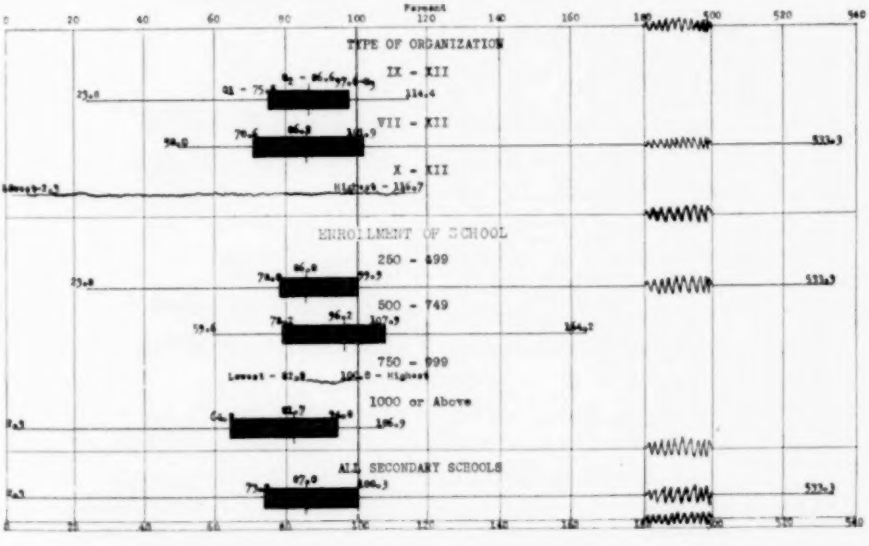
	Lowest	Lower Quartile Point	Median	Upper Quartile Point	Highest
Publications	49.3	83.1	93.9	102.8	281.3
Athletics	48.3	86.4	98.8	118.8	402.0

Table II and I should also be compared to determine the percent of schools operating on balanced budgets in publications and athletics. More schools accomplish this in journalistic activities than in sports save in schools enrolling 500-749 pupils where the percents of schools for publications and athletics are 46.7 and 58.3. The most pronounced differences are present in four-year secondary schools where the percents successfully financing publications and athletics were 63.6 and 51.1; in enrollment groups the greatest differences existed in favor of publications in the 250-499 group, namely 67.7 and 42.6 percents, and 1000 pupils or more where the percentages were 70.2 and 56.5.

Chart IV shows that all groups are fairly successful in financing publications except schools enrolling 500-749 pupils where 53.3 percent acquired deficits. It also reveals that the small school with 250-499 pupils

CHART V

THE DISTRIBUTION OF THE PERCENT EDUCATIONAL EXPENDITURES FOR NEWSPAPERS WERE OF INCOME FROM THIS SOURCE AS REVEALED BY CERTAIN POINT MEASURES IN SECONDARY SCHOOLS ACCORDING TO TYPE OF ORGANIZATION OR ENROLLMENT DURING THE SCHOOL YEAR 1935-1936



Read chart thus: In four year secondary schools when comparing expenditures for newspapers with income from this same source and expressing the ratio in terms of percent, the lowest ratio was 23.8 percent of the income; one-fourth of these schools spent 75.5 (Q_1) percent or less; half of these schools expended 86.6 (Q_2) percent or more; one-fourth exceeded the income by at least 97.6 (Q_3) percent; and the greatest excess of expenditure over income was 114.4 percent.

is practically as successful as a school enrolling 1000 or more pupils when considering the middle fifty percent of the schools.

Schools enrolling 500-749 pupils just as in athletics are attempting to finance publications similar to larger schools and do not have sufficient potential subscribers to compete with them.

Table II points to a conclusion which a chain newspaper publisher would seriously question. Regardless of the classification, a considerable number of schools have deficits, the greatest appearing in schools enrolling 500-749 pupils where 46.7 percent balanced the budget, or 53.3 percent operated "in the red."

The group most successful in preventing deficits was that of schools enrolling 750-999 pupils in which case 75.0 percent accomplished this task. It is interesting to note that this group was almost successful in financing the athletic program. This fact is an important point to bear in mind in determining attendance areas. Short found the lowest annual current expenditure per pupil in this enrollment group when considering the minimum program. This enrollment is sufficiently large to provide educational facilities essential for a sound educational program but prohibitive in smaller attendance areas because of excessive costs due to a limited number of pupils.

THE SCHOOL NEWSPAPER

The school newspper presents the most favorable picture of any of the four specific activities discussed in this series. In the field of publications it is comparable to basketball in sports as the most successful financial venture. This is true except in the case of one junior-senior high school enrolling between 250-499 pupils which had expenditures totaling 533.3 percent of the income, the greatest divergence found in any of the activities included here.

It is obvious that three-fourths or more of the schools in any classification group shown in Chart V had balanced budgets with the exception of senior high schools and schools enrolling 500-749 pupils, in these two cases 63.2 and 62.2 percents, respectively operated on balanced budgets according to Table II. Four-year secondary schools and schools enrolling 750-999 and 1000 or more pupils were most successful in the number of schools making the newspaper self-supporting, the percentages being 80.5, 85.5, and 83.7 percents.

The writer wishes again to call attention to the fact that of the enrollment groups, the schools enrolling 750-999 pupils were most ably

financed while schools enrolling 500-749 pupils had the greatest number with unbalanced budgets appearing "in the red."

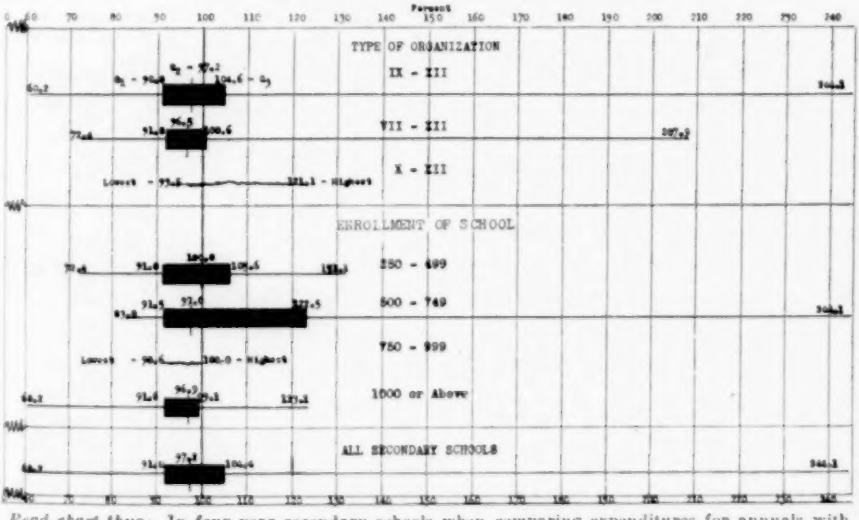
In considering all schools studied, 74.4 percent were able to finance the newspaper, the best record for publications, athletics or any of their subdivisions.

THE SCHOOL ANNUAL

The annual in publications might be compared to football in ability to finance it without a loss except that in none of the classifications were there so many schools unable to cope successfully with its financing. Chart VI indicates that the greatest difficulty was experienced by four-year secondary schools and schools enrolling 250-499 and 500-749 pupils. Table II likewise reveals that six-year schools and those enrolling 750-999 and 1000 or more pupils had the greatest number operating on balanced budgets, the percentage successful being 68.4, 71.4, and 76.9.

CHART VI

THE DISTRIBUTION OF THE PERCENT EDUCATIONAL EXPENDITURES FOR ANNUALS WERE OF INCOME FROM THIS SOURCE AS REVEALED BY CERTAIN POINT MEASURES IN SECONDARY SCHOOLS ACCORDING TO TYPE OF ORGANIZATION OR ENROLLMENT DURING THE SCHOOL YEAR 1935-1936



Read chart thus: In four year secondary schools when comparing expenditures for annuals with income from this same source and expressing the ratio in terms of percent, the lowest ratio was 60.2 percent of the income; one-fourth of these schools spent 90.8 (Q_1) percent or less; half of these schools expended 97.2 (Q_2) percent or more; one-fourth exceeded the income by at least 104.6 (Q_3) percent; and the greatest excess of expenditure over income was 244.1 percent.

Annuals because of their nature involve large expenditures and seem to be beyond the ability of schools enrolling 250-749 pupils to finance successfully as long as their content is similar to large schools where large production tends to lower costs.

It also appears that junior-senior high schools are in better positions to finance them inasmuch as Grades VII and VIII are included with more potentital purchasers, thus lowering production costs.

It should be observed when including all schools 63.3 percent published annuals without deficits.

GENERAL CONCLUSIONS AND INFERENCES

1. Using the school year 1935-1936 as a criterion many secondary schools are unable to finance athletics or publications. This leads to several inferences, namely:

   a. These activities should be curtailed in those schools not able to finance such an elaborate program.
   b. Possibly other activities that are less costly and with high educational value should be substituted for those unsuccessfully financed.
   c. Legislation prevents subsidies for certain aspects of many activities. If public opinion demands these it would be well to make grants legal for those activities which have distinct educational value providing this does not mean curtailment of more worthwhile activities already in the curriculum.

2. Schools enrolling 500-749 pupils should critically analyze their program because this group as a whole seems to have the greatest difficulty financing their program of sports and publications. They should determine whether there is not too much of an attempt to duplicate the elaborateness of the program in schools with more pupils where more gate receipts and subscribers are available.

3. Football and the annual seems to present the school enrolling 250-499 pupils with insurmountable financial difficulties.

4. Auditing of accounts for extra-class activities should be required by law to alleviate the financial struggle encountered by many schools.

THE ACCEPTANCE OF SUPERSTITIOUS BELIEFS AMONG SECONDARY SCHOOL PUPILS

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SINCE the scientific method is being emphasized in our schools, it is necessary to learn whether or not this emphasis has affected the superstitious beliefs of the children. It can be assumed with a fair degree of certainty that if a child adheres to a large number of a certain type of superstitions, his perception or understanding of reality is distorted. Consequently a study of the number and kinds of superstitious beliefs among school children may be a fruitful approach to the problem of personality adjustment. This article will attempt to gain several objectives: a clarification of the meaning of superstition, a presentation of a list of superstitious beliefs that are pertinent to the problem of personality adjustment, an ascertainment of the prevalence of these beliefs among secondary school pupils, and a description of the qualitative differences in the superstitious beliefs accepted by racial and sex groups.

SUPERSTITION DEFINED

Popular usage has defined a superstition as that belief in certain magical powers usually associated with black cats, broken mirrors and the like. Although such a definition may be a valid one among certain uncultured groups, the term superstition has a wider meaning. It may be said to include those beliefs, chiefly in the field of the non-scientific, which are moving out of a more integrated system into a so-called fringe of belief where they are no longer an essential part of the organized system of belief. Since our viewpoints about reality change with our experiences, it may be concluded that the non-essential and irrelevant parts of our beliefs move out of the integrated focus and into the area described as the superstitious. As no two individuals have the same experiences, no two persons can agree on an exact classification of beliefs. What is a superstition to the sophisticated may be a most vital part of the belief of the savage. The general criterion of the definition of a superstition must therefore be the general consensus of opinion depending on the degree of enlightenment of the culture in which one moves.

Since the pattern of our beliefs changes with our experiences, it may become necessary to reinterpret or redefine superstitions as being more than the commonly listed items about broken mirrors and the like. As

will be indicated later, it appears that the beliefs about such items are relatively unimportant in comparison with other ideas that are moving out of the focus of an integrated system of belief. On the other hand, many writers on the subject of superstitions have made unfounded or mistaken beliefs in the field of natural science synonymous with superstitions. The very definition of the term superstition precludes the possibility of making the two synonymous. Since the superstitions are limited to the non-scientific field, the inclusion of mistakes in science does not appear to be justified.

The above definition of superstitions was affirmed by Lesser[1] who states that a superstition is a "belief or practice which is isolated from a system of reference." Rose made further explanations and in general he proposed a similar definition:

> We may now perhaps attempt to define superstition as the acceptance of beliefs or practices groundless in themselves and inconsistent with the degree of enlightenment reached by the community in which one lives.
>
> To identify it, for example, with false belief or practice would be quite misleading. For in the first place, the field in which superstitions are generally to be found, the magico-religious, is the very one in which the standard of truth and falsehood is most subjective and fluctuating; in the second place, a custom or belief, religious or not, which is false may nevertheless be accepted at some places or times by men of enlightened intellect and conscience.
>
> To adhere irrationally to these (false) premises after having their falsity clearly demonstrated might indeed be called superstitious.[2]

For this reason, we must conceive of a superstition as those ideas in the non-scientific field that are moving out of the central integrated area of belief. Since superstitions, as defined, have an effect on human behavior, it is necessary to learn how many and what kind of superstitious ideas are being accepted by the children.

RELATED STUDIES

The studies related to this problem could be fairly well classified into two classes. The first class of studies defined a superstition as that belief associated with black cats and the like. The studies of Conklin,[3] Fisher,[4]

[1] Lesser, Alexander. "Superstition," *Journal of Philosophy*, XXVIII (November, 1931), 17-28.

[2] Rose, Herbert Jennings. "Superstition," *Encyclopedia Brittannica*, 14th ed., Vol. 21, p. 577.

[3] Conklin, E. S. "Superstitious Beliefs and Practices Among College Students," *American Journal of Psychology*, XXX (January, 1919) 83-102.

[4] Fisher, T. R. "The Prevalence of Superstitious Beliefs." Unpublished Master's thesis, New York University, 1926, pp. 1-51.

Wagner,[5] Lundeen and Caldwell,[6] Maller and Lundeen,[7] and Caldwell and Lundeen,[8] were fairly representative of this first class. As pointed out above, the beliefs studied in this group of researches were very likely to be stereotyped and not as consequential to the problem of human behavior as those beliefs nearer the focus of the system of beliefs.

The studies of the second class made unfounded beliefs, mainly misconcepts in natural science, synonymous with superstitions. The studies of Gilliland,[9] Lehman and Fenton,[10] Caldwell and Lundeen,[11, 12] and Valentine[13] measured the decrease in the acceptance of unfounded beliefs by means of a course in psychology or general science. The obvious conclusions were that the process of education was a potent means for the correction of erroneous viewpoints. As pointed out above, if we define a superstition as belonging chiefly to the non-scientific field, these researches of the second class could not be termed studies on superstition.

METHOD AND TECHNIQUES

The items for the *Check List of Beliefs* which constituted the superstitions presented to the subjects were for the most part obtained from original sources. Many items were obtained from the literature read by certain religious groups. The chief source of items, however, was con-

[5] Wagner, M. E. "Superstitions and Their Social and Psychological Correlations Among College Students," *Journal of Educational Sociology*, II (September, 1928), 26-36.

[6] Lundeen, G. E., and Caldwell, O. W. "A Study of Unfounded Beliefs of High School Seniors," *Journal of Educational Research*, XXII (November, 1930), 257-273.

[7] Maller, J. B., and Lundeen, G. E. "Superstition and Emotional Adjustment," *Journal of Educational Research*, XXVII (April, 1934), 592-615.

[8] Caldwell, O. W., and Lundeen, G. E. "Further Study of Unfounded Beliefs Among Junior High School Pupils," *Teachers College Record*, XXXVI (October, 1934), 35-53.

[9] Gilliland, A. R. "A Study of the Superstitions of College Students," *Journal of Abnormal and Social Psychology*, XXIV (January-March, 1930), 472-479.

[10] Lehman, H. C., and Fenton, N. "Prevalence of Certain Misconceptions and Superstitions Before and After a Course in Psychology," *Education*, L (April, 1930), 485-494.

[11] Caldwell, O. W., and Lundeen, G. E. "What Can Be Done Regarding Unfounded Beliefs?" *School and Society*, XXXV (May, 1932), 680-686.

[12] Caldwell, O. W., and Lundeen, G. E. *An Experimental Study of Superstitions and Other Unfounded Beliefs.* (New York: Teachers College, Columbia University, 1932), pp. 1-138.

[13] Valentine, W. L. "Common Misconceptions of College Students," *Journal of Applied Psychology* (December, 1936), 633-657.

tact with a number of people whom the author considered to be unlettered. These beliefs collected from various sources comprised a list of two hundred items. As one of the problems of this research was to collect a number of superstitious beliefs pertinent to personality adjustment, this list of items was presented to seven specialists in psychology who rated each item on a five-point scale of significance to adjustment. The divisions of this scale were *Very Significant, Significant, Fairly Significant, Little Significance,* and *Insignificant.* For statistical convenience, each of these scale divisions was weighted 4, 3, 2, 1, and 0 respectively. After the items that had a combined weight of 10 and below had been discarded, ninety-two items were selected to constitute the *Check List of Beliefs.* The mean rating of the items was 12.90, signifying that on an average the items in the constructed instrument were in the neighborhood of being *Fairly Significant* to the problem of personality adjustment.

Since the acceptance of a belief cannot always be indicated by the use of an affirmative or negative symbol, a certainty scale was employed to denote the degree of acceptance. The five-point scale divisions in this certainty scale were designated as *Very Certain, Almost Certain, Fairly Certain, Uncertain,* and *Impossible.* The instructions to the pupils specified "How certain are you of each item contained in this check list?" Examples were included to illustrate the degree of certainty to be used with each scale division. The respective examples for the five-point scale divisions were: "Water freezes when the temperature of the surrounding air is less than 32 degrees," "Bright children usually receive better grades in school than do dull children," "In spite of the widespread use of automobiles, trains will continue to carry passengers for some time," "Other planets besides the Earth are inhabited by people," and "Apples grow after they are picked from the tree." It was assumed with considerable justification that a subject would check in the *Uncertain* or *Impossible* columns those beliefs by which he was not influenced. The use of the other three columns would indicate his degree of acceptance.

As a check on the pupils coöperation, "blinds" were inserted at fairly regular intervals to ascertain whether the subject read each item. An example of a "blind" was "Snow is white." Every paper that did not have the "blinds" checked in the *Very Certain* column was rejected.

The *Check List of Beliefs* was administered in 1935 to 663 children in the secondary grades in Evanston, Illinois. The grade and sex distribution is presented by the use of Table I.

TABLE I

THE GRADE AND SEX DISTRIBUTION OF THE 663 CHILDREN STUDIED

Grade	White Boys	White Girls	Colored Boys	Colored Girls	Totals
Seventh	66	69	27	24	186
Eighth	93	81	31	25	230
Ninth	78	62	12	13	165
Tenth	45	27	5	5	82
Totals	282	239	75	67	663

Because of the relatively small number of colored boys and girls in the respective grades, it was thought advisable to group the colored children into their respective sex groups in later discussions. The age distribution of the total group of children was:

Age in years	Number
Ten	4
Eleven	46
Twelve	101
Thirteen	191
Fourteen	151
Fifteen	87
Sixteen	47
Seventeen	22
Eighteen	10
Nineteen	4
Total	663
Mean Age	14.14
S.D.	1.25

The scores in the *Check List of Beliefs* were determined by means of a system of weighted scores. The responses in the *Very Certain, Almost Certain, Fairly Certain, Uncertain* and *Impossible* columns were weighted 4, 3, 2, 1, and 0 respectively. The total scores for an individual was the sum of the weighted scores.

PREVALENCE OF SUPERSTITIOUS BELIEFS

As was mentioned above, it was assumed that a subject would check in either the *Very Certain, Almost Certain*, or *Fairly Certain* column those beliefs which he accepted. Consequently it was thought to be justifiable to combine the responses in these three columns and group them under the term *accept*. The responses of the boys and girls in grades seven to ten and the colored boys and girls to the various items in the *Check List of Beliefs* are presented in Table II. The items are presented in a descending order of acceptance according to the responses of the boys in grade seven.

TABLE II

THE ITEMS IN THE *Check List of Beliefs* AND THEIR ACCEPTANCE BY THE WHITE BOYS AND GIRLS IN GRADES SEVEN THROUGH TEN AND THE COLORED BOYS AND GIRLS

	7th Boys	7th Girls	8th Boys	8th Girls	9th Boys	9th Girls	10th Boys	10th Girls	Colored Boys	Colored Girls
Total Number of Cases.....	66	69	93	81	78	62	45	27	75	67
Item										
1. Conscience is a voice within you which accuses you when you have done wrong	51	56	71	70	69	49	40	23	61	53
2. A person is often guided by an "inner" voice which no one else hears	48	59	61	50	48	40	30	18	63	61
3. A deceitful person cannot look directly at you	42	51	47	38	27	36	14	7	54	44
4. Thinking unclean or filthy thoughts causes feeble-mindedness	42	32	52	32	36	28	15	9	58	39
5. The person who tells lies in court after he has sworn to tell the truth will never find peace or happiness	40	45	42	40	29	34	5	7	49	44
6. Angels keep guard over good children	37	46	34	27	33	24	16	13	64	57
7. Everything the history books say is true and correct.....	36	32	35	33	38	32	18	14	41	36
8. No matter what we may try, we shall fill those positions in life marked out for us.....	34	31	40	30	25	28	19	15	50	47
9. The opinions of large city newspapers like the *Chicago Tribune* are usually correct.....	33	25	25	17	25	16	9	1	28	33
10. If we had enough will power, we could overcome any difficulty...	32	38	56	51	45	35	30	17	50	42
11. Everything that the minister says from the pulpit is true.....	30	27	30	19	18	22	9	5	25	32
12. Spirits sometimes advise people by means of dreams.....	28	29	24	26	24	18	10	7	62	52
13. Nature or Fate helps to bring criminals to justice.....	28	24	43	30	41	21	23	13	45	36
14. Sinful people suffer more accidents than good people do.....	26	28	28	14	16	19	10	5	47	47
15. If one feels that someone is present when no one is visible, angels are near	26	22	6	6	8	10	2	0	24	15
16. The devil forces you to steal or tell lies against your will.....	25	19	13	17	14	7	10	3	47	43
17. The wrong-doers will usually be unlucky	24	31	35	20	17	17	15	10	45	45
18. The devil is more apt to tempt you when you are alone than when you are with others.....	24	22	13	10	18	11	12	4	45	32

TABLE II—*Continued*

	7th Boys	7th Girls	8th Boys	8th Girls	9th Boys	9th Girls	10th Boys	10th Girls	Colored Boys	Colored Girls
19. The ghosts of the murdered can become visible to the murderers and remain invisible to others...	24	16	16	10	16	13	5	11	37	32
20. The United States has been entirely on the side of the right in every war in which she participated	24	15	19	10	16	20	6	1	35	27
21. Trying to be very happy will keep away bad luck	23	24	24	18	12	14	5	5	38	26
22. Honest business cannot be successful where dishonest business has taken place.....	23	21	35	24	20	18	8	3	39	33
23. Good people will have better luck with their crops than the people who are not so good.....	22	29	20	13	16	6	4	5	42	31
24. An "inner voice" tells you what life work you shall pursue.....	21	13	24	17	20	14	7	6	36	26
25. Mothers do not need to learn how to care for their children for Nature teaches them how to care for their children	21	12	22	8	21	11	10	4	33	21
26. Cards and poker chips are instruments of the devil.....	21	12	17	10	13	9	3	5	54	46
27. People do not need to learn to love the members of their families as they need to learn to love their friends	20	9	28	21	18	10	17	6	30	18
28. If a person had enough faith, he could work miracles even in this day	19	25	23	14	13	16	7	8	37	27
29. Going to church every Sunday will offset "shady" business practices during the week.....	18	24	16	10	15	13	7	2	22	18
30. The curses of some people come true	18	21	20	19	26	18	11	6	48	40
31. Wars cannot be prevented because the spirit of the times seems to force people to war.....	18	20	19	18	20	16	11	8	39	26
32. Non-Christian religions do not contain a single good teaching..	17	15	13	10	9	8	3	1	31	21
33. The Jews are persecuted because at the trial of Christ they said, "His blood be upon us and our children."	17	14	21	11	18	13	7	3	34	30
34. Members of secret societies plot against non-members	17	11	18	16	25	11	12	5	32	20
35. All our deeds are written by the angels in record books which will be opened on the Judgment Day	16	21	16	4	17	12	7	4	51	43
36. If a doctor gives you medicine and you do not believe that it will help you, then it won't help you	16	18	17	17	12	15	5	3	26	24
37. When a person is converted at a religious meeting, he immediately receives new habits	16	16	19	12	9	12	6	7	47	44

TABLE II—*Continued*

		7th Boys	7th Girls	8th Boys	8th Girls	9th Boys	9th Girls	10th Boys	10th Girls	Colored Boys	Colored Girls
38.	Refusing to take the first job you can get will prevent you from getting another job for a long time	16	16	11	13	11	9	1	1	32	24
39.	Any disease can be cured by believing you are not sick	16	13	17	9	4	11	4	3	17	9
40.	If a person feels that his sins are forgiven, he can do no wrong	15	20	13	6	4	10	3	2	33	21
41.	The Socialists are not as patriotic as Democrats and Republicans	15	11	27	7	12	15	8	1	24	20
42.	The good will never lack bread	14	19	20	17	12	17	4	8	40	39
43.	If one has too much laughter and fun, he will have misfortune	14	9	14	15	5	9	3	2	24	23
44.	Making the sign of the cross will keep evil spirits away	13	4	10	9	12	7	6	2	22	15
45.	The white settlers were justified in taking the land away from the Indians without paying for it	12	18	17	9	9	12	6	3	23	28
46.	Charms which the priest has blessed will bring good luck	12	18	9	9	13	8	9	1	27	25
47.	An educated person can read your thoughts by merely looking at you	12	11	23	13	16	13	9	5	25	22
48.	If we had the right kind of eyes, we could see evil spirits who are trying to lead us astray	12	11	9	5	8	6	5	5	26	20
49.	People can get an answer to a question by opening the Bible at any place. The first passage that is read will be the answer to the question	12	10	10	4	3	4	1	2	11	15
50.	Mankind is bad and sinful by nature	12	8	10	11	19	8	16	4	23	22
51.	Persons who can hypnotize are servants of the devil	11	18	7	3	10	7	2	3	37	35
52.	Women are by nature purer and better than men	11	17	8	14	12	9	2	2	18	31
53.	Some people have the power to bring bad luck to any undertaking with which they may be connected although they do not intend to do so	11	12	11	9	9	8	7	5	20	30
54.	Crop failures and panics are caused by the sins of the people	11	11	11	13	13	5	5	1	30	29
55.	Making fun of a dead neighbor will result in bad luck	11	10	11	8	10	6	2	2	36	31
56.	When good children have difficulty with their lessons, they are guided by angels	10	17	5	4	8	4	3	2	20	19
57.	If we could read them correctly, signs in Nature would foretell future events such as wars and famines	10	14	23	12	9	8	12	8	34	21

TABLE II—*Continued*

	7th Boys	7th Girls	8th Boys	8th Girls	9th Boys	9th Girls	10th Boys	10th Girls	Colored Boys	Colored Girls
58. Refusing to raise as much food as it is possible to raise will cause crop failures	10	7	8	9	6	6	2	0	21	19
59. Some people can predict future events by means of cards or tea leaves	9	18	15	15	12	20	10	9	24	22
60. An insane person is possessed by the devil	9	16	3	1	11	4	2	0	26	22
61. The ghosts of the wicked often return to visit the scenes of their wickedness	9	10	6	5	6	1	1	0	28	19
62. If you believe that a law is unfair, you need not obey it	9	9	13	10	2	2	3	0	28	23
63. Good and bright children frequently die young	9	7	9	9	10	10	4	3	25	24
64. The Jews are trying to gain control of this country by plotting together and by favoring their own people	9	5	7	5	9	8	3	1	26	20
65. This depression is an indication that the world will soon come to an end	8	10	2	1	3	4	1	1	18	18
66. If you stand on a high place and you think you hear someone telling you to jump down, it is the devil	8	8	9	5	7	4	4	1	41	39
67. If you dream that you will have bad luck, you will have good luck; if you dream that you will have good luck, bad luck will follow	8	7	7	3	3	7	0	1	29	18
68. One's fortunes are more or less determined by the star under which he is born; so we can learn our future by studying the stars	7	9	9	9	7	9	1	3	20	21
69. After man sinned, Nature was cursed and refused to produce as much food as formerly	7	7	9	3	11	3	3	2	23	15
70. The look on the face of a dying person can tell us the state of his future life	7	6	8	4	6	8	2	3	19	20
71. If you receive a chain letter and do not send it on, you will have bad luck	7	6	5	2	5	2	2	0	11	10
72. If you cross your fingers after telling lies, the lie will not count against you	7	3	2	1	2	1	1	0	1	0
73. Many airplane and bus wrecks occur because some of the travelers are wicked	6	20	9	4	8	6	4	2	18	19
74. The devil can cause animals to work mischief	6	17	10	5	13	10	5	3	40	37
75. Some crops, like potatoes, yield more if they are planted during certain phases of the moon	6	10	21	8	20	6	8	2	37	29

TABLE II—*Continued*

	7th Boys	7th Girls	8th Boys	8th Girls	9th Boys	9th Girls	10th Boys	10th Girls	Colored Boys	Colored Girls
76. When you dream of the death of a living person, he will die in the near future	6	9	4	3	3	4	0	1	20	15
77. If a mysterious knocking is heard at night and no one is visible, death will follow shortly.....	6	8	3	2	3	2	1	0	13	19
78. The ghosts of evil men cannot find peace and so they wander around at night	6	6	5	2	2	2	2	1	23	21
79. A person who cannot look a cat in the eye is guilty of a wrong..	6	5	6	3	2	2	0	1	19	8
80. People can gain advice about the future by attending spiritualistic meetings where they can talk to the spirits of the dead.....	6	2	5	2	2	0	1	0	16	10
81. Joining a church different from the one your parents attend greatly affects your chances of going to Heaven	6	0	3	3	5	2	0	0	10	7
82. We can tell our future by the lines in our hands.....	5	14	8	9	9	6	5	2	20	22
83. Whatever a fortune-teller says to you will come true.....	5	10	5	5	0	2	2	1	23	14
84. If you use a certain pen or pencil in an examination and get a good grade, it is necessary to use the same pen or pencil in every examination to get a good grade.....	5	6	3	2	0	0	1	1	12	9
85. A marriage performed in Lent will be unlucky	5	4	2	2	6	5	2	1	14	8
86. A falling star indicates the death of a famous person.....	5	4	2	0	3	2	2	0	11	9
87. When things go wrong in your work, it is a sign that others are plotting against you	4	7	2	2	6	6	0	0	16	13
88. If a bird flies into your house, a death will follow within a year..	4	2	2	2	1	1	2	0	13	15
89. The ability or power of one person can be given to another by the laying on of hands or by giving articles of clothing.....	4	1	2	0	1	2	0	0	10	7
90. The ghosts of people whom you have wronged will continue to torment you in life and death..	3	9	2	1	2	2	0	2	18	13
91. People should be in bed during the early hours of the morning, because at that time the evil spirits roam around.....	2	0	1	0	0	0	0	0	8	4
92. If you put a garment on wrong side out in the morning, you should leave it that way or you will have bad luck.....	1	4	3	3	0	1	1	0	5	7

It may be seen that as a rule the items believed in most refer to the animistic role of Nature, and a deterministic viewpoint of life. Among

the most widely accepted items were also certain beliefs about the validity of knowledge contained in history books and newspapers. The least accepted items confirmed a previous statement that the acceptance of beliefs about black cats and the like seemed to be relatively unimportant in comparison with other superstitions. Among the items least accepted were the ones referring to falling stars, lucky pencils, garments worn wrong side out, and marriages performed in Lent.

Although the number of cases in the respective groups varied considerably, it may be justified for the purposes of comparison to present in Table III the mean percentage of acceptance of the items in the *Check List of Beliefs* according to the various grade levels.

TABLE III

THE MEAN PERCENTAGE OF ACCEPTANCE OF THE ITEMS IN THE *Check List of Beliefs* CLASSIFIED ACCORDING TO THE GRADE LEVELS

	Boys		Girls	
Grade	No. of Cases	Percentages	No. of Cases	Percentages
Seventh	66	22.27	39	22.41
Eighth	93	15.96	81	14.42
Ninth	78	18.56	62	18.35
Tenth	45	19.70	27	20.10
Colored	75	37.56	67	36.62

According to these data, the belief in superstitions does not decline with the advance in grade levels. On the contrary, the acceptance of superstitious beliefs declined from grade seven to eight and advanced again in grade nine. Although the relatively small number of cases in grade ten precluded any extensive generalization, it appeared that the pupils in this grade level accept even more superstitions than the children in grade nine. The mean percentage of acceptance among the colored children was very much higher than among the white children. Presumably the lower cultural levels at which the colored children lived had a most potent effect in producing a greater incidence of superstitiousness. In general, it may be concluded that our schools have not succeeded in eradicating superstitious beliefs which seem to flourish even in the face of the emphasis on scientific methods.

As considerable variation usually occurs in the chronological ages in a specific grade, it may be necessary to present the incidence of superstitious beliefs in terms of age levels. The mean scores of the subjects in the *Check List of Beliefs* will be presented in Table IV in terms of

chronological ages. The totals in this table will not check with those in Table III as several children failed to indicate their ages.

TABLE IV

THE MEAN SCORES OF WHITE AND COLORED BOYS AND GIRLS ON THE *Check List of Beliefs* CLASSIFIED IN TERMS OF CHRONOLOGICAL AGES

Age in Years	White Boys		White Girls		Colored Boys		Colored Girls	
	Cases	Score	Cases	Score	Cases	Score	Cases	Score
Eleven	14	36.60	26	85.15	4	168.75	4	146.00
Twelve	40	71.50	43	76.20	7	134.95	10	144.50
Thirteen	83	71.40	68	73.60	12	143.50	23	141.05
Fourteen	60	74.60	56	74.80	17	93.10	16	127.25
Fifteen	38	81.00	25	81.90	17	137.20	5	113.50
Sixteen	20	78.00	9	61.75	11	133.90	4	162.25
Seventeen	12	64.20	5	62.50	4	111.00	3	98.50
Eighteen	4	61.00			3	81.00		
Nineteen	3	64.20						
Total	274		232		75		65	
Mean		73.69		73.41		126.06		136.69
S.D.		9.74		5.04		21.62		14.03

The data in Tables III and IV seem to agree for the most part that no progressive decline in superstitious belief is evident by continued attendance at school. The mean scores for the white boys in age levels of twelve to fifteen seem to remain fairly stationary for several age levels followed by a slight increase in succeeding age levels. In the case of the white girls a slight decrease is found at the thirteenth year but the increase in the following age levels is marked. The relatively small number of cases in the specific age levels for the colored groups prevented similar comparison. The differences between the total mean scores for the white boys and girls were insignificant. The colored girls appeared to be slightly more superstitious than the colored boys. The colored groups were very much more superstitious than the white groups.

QUALITATIVE DIFFERENCES IN THE SUPERSTITIOUS BELIEFS OF CHILDREN IN REGARD TO SEX AND RACE DIFFERENCES

Examination of Tables II, III, and IV reveals that the quantitative differences between the sexes in regard to the acceptance of superstitions were not significant. On the other hand, a significant difference was found between the number of superstitions accepted by the white and

colored groups. The question may arise whether or not a difference in kind existed in the superstitious beliefs accepted by the racial or sex groups. It may be found by examining Table II that no significant qualitative differences existed in the beliefs of the two sexes, irrespective of race. According to this study, no basis can be found for asserting that either sex accepts beliefs different from that of the other.

Although no significant differences were found between the sexes with respect to the number or kind of superstitious beliefs accepted, a qualitative difference existed between the beliefs of the white and colored race. Not only did the colored groups accept more beliefs but they also tended to emphasize those superstitions that referred to death, the devil, and ghosts. As this study did not attempt to hold constant the socio-economic status, it is impossible to state whether this greater incidence of superstitiousness of the colored groups was the function of their economic environment or of their culture complex. Beyond a doubt, this greater degree of superstitiousness among the colored groups was the result of a multiplicity of factors of which the socio-economic status was one. Consequently the generalization may be made that the emphasis on the scientific methods has failed to eradicate superstitions among important sections of our population, notably the less favored socio-economic groups.

SUMMARY

This study found that in spite of our educational procedures a large number of superstitions were still being accepted by our secondary school population. The superstitions most prevalent referred to the animistic role of Nature, supernatural manifestations, and deterministic viewpoints of life. Strange to say, the incidence of acceptance did not decline with chronological or scholastic advances. No significant quantitative or qualitative differences in superstitiousness were found between the sex groups. On the other hand, significant quantitative differences and a few qualitative differences were found in the incidence of superstitious beliefs between the white and colored children. Since superstitions were found to be so prevalent even among advanced secondary grades, it is suggested that further research be made in this field.

EDITORIAL

EDUCATIONAL ENGINEERING FOR THE SCHOOLROOM

THE classroom is a complexity of social experiences, of differences in native mental development, and of attitudes toward and interests of the pupils, all of which affects instruction in a way to suggest the need of a more extended study of child development within this school situation and with careful research analyses of actual facts found in classroom work.

Modern industry, in its productive activities, has developed the field of a more scientific organization of the relations between the required processes of manufacture which calls for the services of especially trained engineers to establish conditions for fuller success. Many of our school systems have established research activities, and special child-study departments, with child clinic activities to care for individual difficulties. Such departments, however, need to be expanded in a way to minister to the fundamental activities of all the children and of all the teachers in these processes of nurturing the wisdom and beauty and goodness needed for fellowship life in a free and united country. Perhaps this is more than a research job. If so, it is an engineering one which will require the results of much new research and experimental work concerned directly with the schoolroom situations.

Undoubtedly an able research worker can become, in part at least, an engineer who can organize the facts obtained by research, and combine them with other facts needed to get results in the school situation. This combination of minds requires two rather distinct habits of thinking; but, in the same field of effort, the research facts should point the way toward the engineering problems. The engineer's ingenuity will probably open some lines for more research concerned with better organization of the whole school situation. It is well, however, to distinguish the two ways in which mental habits work; one to discover facts, the other to organize a use of the knowledge of facts to accomplish new results.

The first effect of this combined thinking about the present problems of elementary education is to open the situation to its very foundations. What laws for the natural growth and training of youthful minds can

be used and how can they be so adapted to the work of child nurture as to direct these native energies toward the development of the purposes which direct growing human nature as it advances toward greater freedom in union with our fellows?

The educational engineer recognizes certain more or less definitely known natural and social situations which may be readjusted and where the necessity of such new adjustment can be clearly recognized. In such work, he holds himself responsible to public welfare. His problem is to fit the school activities to child development along the line of the child's natural growth and toward the goal of adequate fellow citizenship. His survey of the constructive work which is required is concerned with measured resources and with determined uses of these in definite quantities of effort for each step in the educational process. Beginnings in this work are found in the activities of such institutions as the Educational Records Bureau of New York.

The research worker will point out to the engineer that the most of the statistical results are not based upon constant units of size, and are not measures of quantity, but are discoveries of the order in which the individuals are related to each other from the highest to the lowest. It is by chance that the differences between individuals may be nearly equal in size. However, when a very large number are included in a relation where the differences are not very great, it is probable that the ordinal relation will give a measure of differences quite uniform except perhaps for a few individuals at either end of the ordinals.

In the school situation, however, the ordinal units have a definite value for any single numbering of individuals. But when two or more types of situations are to be studied for the same school group, then the engineer seeks for a measure, in its own cardinal units, by which the relations of the individuals to their growth in general intelligence on the one hand, and on the other hand to their particular attainments on a test in school subjects of study, can be correlated. Such a common measure in cardinal units related to the same individuals may be the unit of chronological age. It is by the means of such an extension of research statistics that the engineer may obtain a usable measure of the situation between native abilities and school attainments, and can direct his experimental study of school training in its positive widening effect on general intelligence ability at each chronological age.

In this analysis of the class situation, four assumptions are of particular importance. Measurements are or may be established in the fields

of three of these; namely (1) of the effects of maturity with its widening interests and experiences, (2) of the natural increase of general intelligence, and (3) of the success of school instruction and of the training of skills. The fourth assumption concerns the development of interest and effort for knowledge and skill in educational fields common to the activities of modern civilization, but which in some cases require that a particular aptitude of mind be obtained in the learning situation. This may be done by expanding experiences in related fields in a way to gain some insight of relations for organizing thought in the special field. Arithmetic is one of these fields in which the race developed ability very slowly. How to accomplish desired results in such fields is still a problem. The real purpose of this editorial is to suggest some of the widely related school problems which are before us.

GEORGE A. BROWN

REVIEWS

Address all communications relative to book reviews to Editor Kai Jensen, University of Wisconsin, Madison, Wisconsin.

JONES, ARTHUR J. *The Education of Youth for Leadership* (New York: McGraw-Hill Book Company, Inc., 1939), pp. xix+ 246. $2.00.

This extremely provocative book on leadership was written to clarify the problems of early diagnosis of leadership characteristics, to designate the responsibility of the school and other agencies in developing these potential traits for the betterment of both the individual and society, and to stimulate experimentation and research along this line.

The author devotes the first part of the book to an analysis of leadership qualities, basing his statements on carefully compiled trait ratings of recognized geniuses in various fields of endeavor. His conclusion was that young people exhibiting high scholastic rank, his intelligence test ratings, marked persistence in their work, strong emotional drive, and confidence in their own abilities might be selected as potential leaders.

Part II of the valuable book is concerned with the very effective systems of selection and training of leaders in Athens and Rome, followed by a descriptive analysis of the recent English and Russian systems, each with suggestive value for our own country though widely different in methods. In England the *laissez-faire* idea of selection of leaders still prevails, but a notable stride toward definite and impartial selection is exhibiting itself in the civil-service system. Dr. Jones says of the Soviet Union: "The organization of the U. S. S. R. as a whole is a splendid example of a coördinated, unified, integrated system directed toward a well-defined end," with leaders being selected from all classes regardless of everything but their capacity to lead. The schools are so closely linked with industry that there is no line of demarcation between education and life: citizenship is not deferred for the child; he is a part of the State. While he recognizes possible defects which time and experience will reveal in the plan, the author credits the obvious merits of the intelligent and stimulating project for the selection and training of Soviet leaders and the valuable suggestions they make for American education and political life, in spite of our differences in social ideals.

In Part III, Dr. Jones deals primarily with the American secondary schools, with incidental references to other agencies, in his discussion of leadership. Traditional organization of the school system has inhibited necessary experimentation and definitely retarded progress in leader selection and development, he feels. Today student clubs and other activities are being utilized in leadership programs, but in spite of such experimentation there are few well-organized programs.

The author concludes his stimulating book with a condensed analysis of the elements considered essential to an effective leadership program. The book is an excellent contribution toward the solution of one of the most pertinent problems confronting contemporary education and is recommended both as a reference and

a textbook as yet without a peer in its particular field.

LOWELL N. DOUGLAS
Baylor University

MILLER, DAVID F., AND BLAYDES, GLENN W. *Methods and Materials for Teaching Biological Sciences: A Text and Source Book for Teachers in Training and in Service* (New York: McGraw-Hill Book Company, Inc., 1938), pp. xii + 435. $3.50.

This book has been written out of the experiences of the authors in Ohio State University in preparing young people to teach biology, and out of their observations of the difficulties faced by these people after they have secured jobs. They have endeavored to serve students preparing to teach as well as to serve teachers in service. The book is in two parts, Part I presenting the point of view the authors support and an application of the point of view in appraisal of objectives, types of courses, methods, curriculum trends, and other matters. Part II gives practical information about how to prepare and how to use teaching materials.

The main points supported in Part I, are that education is for a changing society and that the approach to the study of the individual and of society should be ecological. Individual variation is presented as a biological fact, to be recognized in education in order that the teacher may help the individual to discover and to develop his unique abilities and, with recognition of the welfare of his society, to exercise, in his own behavior, his rights of free choice.

The objectives of teaching in biological subjects are stated as information, methods of thinking, application of principles, and attitudes. These, the authors say "are essentially the objective of the teaching of all subject matter." Information as an objective is accepted as primary in that it is foundational to understanding which in turn is essential to the building of habits of thinking and attitudes. Teaching procedures for the development of scientific methods of thinking are analysed and illustrated by "the problem of maintaining a fish in a microcosm." This is worked out in considerable detail. The process of induction is exercised through applying principles and through generalizing. Attitudes accrue from experience and result in patterns of conduct.

There will be some adverse criticism of this treatment of objectives, for many do not agree that objectives of teaching biology are essentially the same as those in the teaching of all subject matter. Biologists have contributed methods of investigations, and have reached conclusions that now have widespread application. Witness for example the methods of ecology, developed through the study of plant and animal societies. These methods are applied extensively in the study of human society and in social planning. Witness also the wide application of the biological principle of evolution. Biology teachers are most competent to work with biological principles and methods. Furthermore, of the troublesome problems confronting young people there are some with which the biology teacher should be especially concerned. These include: understanding the physiology of one's own body and maintaining conditions of personal and social health; protecting oneself from fraud and deceit particularly in the sale of foods, drugs, and cosmetics; understanding how the resources of the environment may be used without depletion; and many others. These suggest objectives peculiar to teaching biology. Biology teachers have a distinctive service to perform in educa-

tion and this service should be made explicit in the statement of objectives.

Other matters which are treated in Part II include types of biology courses, methods to be employed in planning and in teaching, methods of evaluation, and the ever present problem of materials and equipment, with a separate chapter on visual education. The final chapter of Part I on trends in the curriculum, includes a discussion of integrated courses. An illustrative study, used in one integrated course, of "how floods are controlled and water and other natural resources conserved," is excellently reported.

Part II is one of the most useful sources of information now available on preparing and using classroom materials for general biology. There are chapters on student projects; on collecting, culturing, and preserving; on preparing slides; and on methods and materials to use in the teaching of various processes, including photosyntheses; digestion, nutrition and growth; circulation, response; and reproduction and heredity. These features of Part II supported by the point of view of Part I, make this book an extremely important one for biology teachers to own.

SAMUEL RALPH POWERS
Columbia University

COLE, LUELLA. *The Improvement of Reading: With Special Reference to Remedial Instruction* (New York: Farrar & Rinehart, Inc., 1938), pp. xii + 338. $1.75.

"If a school is going to offer remedial reading at all, it should be prepared to do a good job." The author has outlined techniques for attaining effective progress from remedial reading instruction. The methods were designed principally for use in the elementary school. After the introductory material there are sections on speed of reading, general and technical vocabulary, comprehension, special problems, and remedial reading.

The author tends to overemphasize the relationship of eye disabilities to reading performance. Although every child should have eye defects remedied recent research has not shown that these defects are important determinants of reading disability. The author's interpretation of the role played by eye movements and reading rhythm is without firm foundation. Although the pacing of eye movements does appear to improve reading performance, careful check experiments show that equal gains may be achieved by other means. The emphasis placed upon vocabulary training is commendable, especially the need of acquiring a technical vocabulary in the content subjects. Insertion of illustrative case studies at appropriate places is helpful.

This text would be more complete if the names of appropriate standardized tests and advice concerning the interpretation of test results had been included. Although the author gives excellent directions on construction and assembling remedial materials, she might also have listed the more acceptable manuals of materials that are available in print. The suggestions concerning diagnosis and remedial work with the nonreader lack completeness. It is convincingly pointed out, however, that most of the classroom teacher's work is preventive rather than curative.

Practical is the word that best describes this book. The author has sensed rather clearly what the classroom teacher is able to do in terms of time available in her training. For the most part the exercises are well chosen and readily constructed by the teacher. Obviously, the author has a real feel for the type of text

that is usable by the *classroom teacher*. The book will undoubtedly receive a hearty welcome.

MILES A. TINKER
University of Minnesota

WILKINSON, H. S. S., AND BROWN, B. D. *Improving Your Reading* (New York: Noble and Noble, 1938), pp. xiii + 361. $1.00.

This text was prepared for children in the intermediate grades of the elementary school and for those in the junior high school who have severe reading handicaps. It consists of diagnostic exercises to measure needs, sections on oral and silent reading, and end exercises to measure progress. In the appendix are lists of standardized reading tests, remedial materials, supplementary books, and an excellent selected bibliography on remedial reading. Throughout the directions are written to the student. There is a constant striving to present the material in an interesting manner.

Training in oral reading consists of exercises to promote recognition of new words, phonetics, phrasing, left to right sequence of perception and precision in work recognition. Although exercises for use of words in context are furnished, some will consider that too much of the vocabulary drill is extrinsic to the reading situation. The reinstatement of a proper emphasis upon oral reading, however, will find wide approval.

Silent reading receives somewhat less emphasis than oral. Stress is placed upon enjoyment of reading, remembering, and training in special reading situations such as time tables, automobile maps, dictionary, telephone directory, encyclopedias, and reference work in the library.

For those who may wish more reading material for class use the supplementary sources cited will be found ample. Since the text is for the student the teacher of remedial reading will need to consult the references.

MILES A. TINKER
University of Minnesota

SMITH, SAMUEL, AND SPEER, ROBERT K. *Supervision in the Elementary School* (New York: The Cordon Co., 1938), 460 pp. $2.90.

A book on school supervision ordinarily falls into one of three classes: a general treatment of the various phases of supervision such as classroom visitation, teacher rating, etc.; a consideration of supervision as it applies to the secondary school field; or supervision of elementary education. The latter two types are generally organized into subject fields, such as the supervision of Reading, the supervision of Mathematics, etc. Most of the books that have been published within the past few years belong to either the first or the second type. Recently, one concerned with the elementary school has appeared.

The typical method of dealing with elementary or high school supervision adopted by various writers is to devote separate chapters to each of the main subject-matter fields. Speer and Smith have departed from this practice by organizing their text into chapters treating various phases of supervision, such as constructing courses of study or classroom observation, and then in each chapter discussing the phase of supervision under consideration as it is related to the teaching of the separate school subjects. As a rule, each chapter begins with a presentation and brief elaboration of two or three key principles of supervision and ends with a more extensive list of specific principles that apply to the phase of supervision under treatment. The topics included under the chapter on "Methods of Supervision" are illustra-

tive: Key Principles of Supervision, Applications to Fine Arts and Industrial Art, Applications to English Instruction, Applications to Health and Physical Education, Applications to Mathematics Instruction, Applications to Nature Study and Science, Applications to Social Studies, Personnel Problems in Supervision, Principles of Supervision, Questions for Discussion, and Selected References. The chapter headings of the volume are as follows: Methods of Teaching, Methods of Supervision, Classroom Observations, Courses of Study, Activities of Teachers, Activities of Pupils, Equipment Community Relationships, and Current Problems in Supervision. The authors attack practically every supervisory problem on four fronts: preventive supervision, creative supervision, constructive supervision, and curative supervision.

Because each school subject is treated separately by the authors in connection with the discussion of each aspect of supervision, there is much needless laboring of similar points in the various chapters that naturally results from the fact that the writers systematically follow an outline and in so doing are forced continually to repeat or rephrase certain ideas that pertain to the supervision of all school subjects. For example, in the chapter on Methods of Supervision the topic of demonstration lessons is discussed again and again in connection with the various school subjects. A preferable procedure would seem to be to present first a statement of the general principles as regards demonstration that apply more or less to all teaching fields and then to follow this with supplementary suggestions that relate uniquely to the teaching of only certain school subjects.

Since the area covered by such a text is very large and also since a book of this sort must be held within reasonable size, the treatment accorded each school subject is of necessity very much condensed. Under a discussion of equipment for Music instruction, for example, a supervisor is told (p. 374) that an average school system of medium size needs "Pianos, song books, textbooks, biographies, phonographs and discs," etc., (23 items are listed); in a discussion of Art, he is told (pp. 374-5) that the equipment should include: "Drawing pencils, paper, cellophane, crayons, old silks," etc., (48 items are listed). Such concentrated information will probably not be of any great value to the ordinary supervisor.

The book appears to be designed more particularly for special supervisors of school subjects than for such generalists as building principals. This conclusion seems to be a valid one inasmuch as so much specialized knowledge and skill with regard to specific teaching fields,—for example, the ability to demonstrate before teachers highly specialized techniques,—are assumed by the writers to be possessed by, or are recommended as the desirable qualifications of, a supervisor.

No clear-cut philosophy of teaching guides the would-be supervisor as he peruses the contents of this volume. At times, the authors appear very enthusiastic about procedures generally referred to as "progressive;" on the other hand, most of the contents of the publication reflect the traditional subject-centered emphasis in education.

The philosophy of supervision which gives direction to the efforts of the authors appears to be that supervision is the improvement of the teaching act. Many writers today, however, are veering from this older conception to one that supervision is concerned with all of the factors that condition learning.

Notwithstanding the several negatively critical comments offered by the reviewer,

he nevertheless is of the opinion that any supervisor can gain many helpful ideas from a careful study of the book under consideration. The questions appearing at the end of each chapter are very good. Many practical illustrations of good and poor teaching are presented. Almost all of the forty-six pages in Chapter III, "Classroom Observations," are filled with reports of lessons conducted by teachers. The descriptions of these lessons, however, are perhaps too brief as are also the authors' comments upon them or upon the supervisory help offered to the teachers involved. Parenthetically, if the descriptions of these classroom observations reflect a cross-section of the supervisory guidance generally given to teachers, classroom supervision in the elementary school by and large must be pathetically ineffective.

HERBERT T. OLANDER
University of Pittsburgh

DOWNS, ROBERT B., EDITOR. *Resources of Southern Libraries: A Survey of Facilities for Research* (Chicago: American Library Association, 1938), pp. xii + 370. $4.50.

Under the title *Resources of Southern Libraries: A Survey of Facilities for Research*, the American Library Association has recently published a comprehensive survey of materials in southern libraries which will be of particular value to scholars and investigators. The survey was made possible by a grant from the General Education Board and was carried out on a voluntary basis by a number of southern librarians under the general editorship of R. B. Downs, formerly librarian of the University of North Carolina.

The specific objectives of the survey were: (1) to provide a basis for interlibrary loans; (2) to assist scholars and advanced students to find the best collections in their field; (3) to give a basis for planning, as in agreements to divide acquisition activities; (4) to aid national and regional catalogs; (5) to locate and describe little-known collections of value for research; (6) to discover particular weaknesses in libraries of the southern area; and (7) to stimulate the development of research collections.

The libraries covered in the survey are those in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. The collections surveyed represent many kinds of libraries and much of the materials described is not to be found in other libraries in other sections of the country. Altogether approximately 10,000,000 volumes are involved and the specific fields include: (1) reference books, bibliography, and related materials; (2) government publications; (3) manuscripts; (4) newspapers; (5) general periodicals and society publications; (6) language and literature; (7) philosophy and religion; (8) fine arts; (9) history; (10) social science; (11) science; and (12) technology.

In order to secure uniformity in the treatment of the material, an extensive illustrative guide was developed and the surveyors were carefully instructed concerning the types of material to be examined and the nature of the data to be secured in each field. The most extensive collections in the various fields are described and an indication is given of the character and range of material held by the various libraries in each of the states. An appendix lists the libraries surveyed in 167 cities and towns and a bibliography lists by states printed catalogs, bibliographies, and descriptions of the material to be found in the region. An extensive index to subjects and to names of indi-

viduals, institutions, and places gives quick access to information concerning the material.

The significance of the publication is noteworthy in view of the fact that many of the items contained in the libraries have not been covered by the union catalog of the Library of Congress, and many of the serial publications have not been listed in the Union List of Serials of the United States and Canada. The publication, therefore, will prove of special value to investigators in the region in that it will enable them to locate materials close at hand, and for scholars outside the region it will be of use because it will bring to their attention resources which hitherto have escaped their notice.

LOUIS R. WILSON
University of Chicago

SCHMIDT, C. C. *Teaching and Learning the Common Branches* (New York: D. Appleton-Century Company, Inc., 1938), pp. xix + 468. $2.25.

The keynote to this book is found in the author's opening statement in the Preface: "This book is the outcome of more than twenty years experience in the supervision of instruction." The subsequent pages furnish ample evidence that the book is the product of experience and not of scientific experiment. Although written primarily for college classes in methods, it will find its greatest usefulness in the hands of beginning elementary teachers in service. It tells the teacher just what to do. There are long chapters on handwriting, spelling, reading, language, grammar, history and civics, geography, and arithmetic. These are preceded by two chapters of more general nature one on the relations and outcome of learning and teaching and one on the methods of learning. The book will appeal to the beginning teacher not only because it tells her what to do, but also because the language is very simple and clear, and no conflicting methods or theories are proposed. For example, for teaching the first lesson in book reading, eight simple rules of procedure are given with a brief explanatory paragraph on each. This requires about three and a half pages, but lest the reader might have overlooked something, a third of a page is used to give a summary of the "high points of this section." Such summaries appear from every four to six pages. Thus the reader is given ample review of the outstanding points.

The first edition of this book was published in 1929. This reviewer has been unable to secure a copy of that edition and so cannot make any comparisons. In searching through the content for material which could probably not have been written in 1929, the reviewer found very little. Once in a while the text contains a reference to a publication that appeared since 1932, but it is rare. For the most part the newer references are contained only in the bibliographies, of which there is one at the end of each chapter. Even these are not as up-to-date as one would expect. However, these deficiencies are hardly a handicap to the beginning teacher.

The greatest defect in the book is its failure to take into consideration the great amount of experimental evidence available as a basis for pedagogical procedure. This defect makes the book of doubtful value as a college text, for surely a college-trained teacher should know the evidence for and against a given procedure, and also that it is not always possible to tell a teacher just how she should proceed. In fact, science knows no one best method. This is always problematical and to recognize this is a healthful attitude not only for the beginning teacher

but also for those who have had more than twenty years experience. Another defect in the book from the standpoint of a college text is its failure to stimulate creative and critical thought. The reader gets the impression that the problems of how to teach have been solved and all that he needs to do is to listen to the voice of experience. However, the author and publisher are to be commended for giving beginning elementary teachers a very practical book for helping to solve their everyday problems.

H. B. REED
Fort Hays Kansas State College

LAMAR, EMIL. *The Athletic Plant: Layout Equipment and Care* (New York: Whittlesey House: McGraw-Hill Book Company, Inc., 1938), pp. x + 302. $3.00.

This book, replete with diagrams and illustrative materials, endeavors to aid schools in the construction and maintenance of athletic equipment by utilizing at a small cost the school shop facilities. All sports, winter and summer, indoor and outdoor, are given consideration with complete directions for the planning of playing fields and buildings devoted to various sports. Directions for construction and upkeep of equipment are so detailed and exact as to enable the neophyte to proceed in athletic plant construction with some degree of assurance on limited funds. The final chapter Mr. Lamar devotes to the efficient handling of athletic contests, discussing problems which confront every physical education teacher or athletic director at such times.

The book is informative and practical and adapted to the needs of those responsible for athletic plants in schools, colleges, Y.M.C.A.'s, camps and playgrounds. Instead of reverting to a multitude of sources we are able to find under one cover the solution of the majority of the problems relative to the construction and maintenance of a modern athletic plant. Such seems to be the main value of this helpful book.

LOWELL N. DOUGLAS
Baylor University

WOFFORD, KATE V. *Modern Education in the Small Rural School* (New York: The Macmillan Company, 1938), pp. xiii + 582. $2.75.

Writers in the field of rural education are agreed that there are many problems within the realm of human behavior as they affect children and adults in rural communities. Problems of rural life and education have been given more consideration during the past decade than during any other like period.

The consensus of opinion seems to be focused on the fact that our rural communities with their educational problems, are a vital part of our American life and as such will continue to be a force in our democracy.

It seems to the reviewer that this point of view has produced Kate V. Wofford's *Modern Education in the Small Rural School.* Practically every chapter deals with the historical background which serves as a foundation for the four parts into which the book is divided. In each case she shows the possibilities of coöperation within the community as well as with governmental agencies, in order that the education of rural children and adults may be facilitated.

The book may serve the rural sociologist and the layman as well as the rural teacher. Its 582 pages are packed with suggestions for the improvement of the rural school, with the assumption that a large number of one room rural schools will be with us for many years to come. Since it is inevitable that the rural prob-

lem will always be a part of our American life, Wofford shows that we must take cognizance of this fact and carry over into the rural communities those things which will make for a better and broader understanding of our moral and civic obligations to society. The book clearly points out that we have sufficient facts and data upon which to build a better educational program, both for the children and the adults.

The bibliography is carefully selected and its use should lead to a better understanding of the rural school problems and their solution. The author shows the need for and the possibility of having a more modern educational program in the one room rural school and its relation to our changing society with its many new interrelationships with small town and urban centers. She emphasizes the very important fact that the teacher still is of paramount importance in rural education, and with a new understanding of the problems that surround her, she can coördinate the many activities into a program that will become the center of the rural social and intellectual life.

Nor is the individual grade forgotten or the individual child. Her analysis of the problems of program making, individualized instruction, planning the out of recitation period as well as keeping records with a view to understanding all of the children under her jurisdiction, make a contribution well worth while for those interested in rural education, and especially the rural school teacher herself.

The case studies included should be of much help to one who is really desirous of helping children. The appendix "A" to "H" inclusive is a body of data that should prove valuable materials to those who work in the rural school field. Such helps as the modification of the daily program to include the needs of the five and six year old children; the suggestions for the grouping of pupils, and the flexible daily program for use in the intermediate and upper grades, should especially be of much service to rural school teachers.

The author does not overlook the various organizations that are found in the rural communities, but shows the vital part they play in the life of the people they serve. Thus the school and community are one.

The book is probably a little too large for the average rural worker and teacher. However, it is well worth studying and may be used in classes where an understanding of rural school problems is desired.

L. M. Hrudka

Berwyn, Illinois

RESEARCH ABSTRACTS and BIBLIOGRAPHIES

Address all communications relative to research abstracts and bibliographies to A. S. Barr, University of Wisconsin, Madison, Wisconsin.

BULLETINS

ADE, LESTER K. *Suggestions for Developing a Social Studies Program, in the Secondary School.* Bulletin 411 (Harrisburg: Department of Public Instruction, Commonwealth of Pennsylvania, 1939), 32 pp.

This bulletin is intended as a guide to school administrators and teachers in formulating a curriculum for social studies.

ADE, LESTER K. *Suggestions for the Conduct of Meetings of Teachers.* Bulletin No. 151 (Harrisburg: Department of Public Instruction, Commonwealth of Pennsylvania, 1939), 22 pp.

This pamphlet is intended as an aid to county and district superintendents and other public school administrative officials in the conduct of meetings of teachers.

ADE, LESTER K. *Teacher Placement.* Bulletin 152 (Harrisburg: Department of Public Instruction, Commonwealth of Pennsylvania, 1939), 31 pp.

This bulletin on teacher placement has been prepared to acquaint the school officials, teachers and prospective teachers with the placement service maintained by the Department of Public Instruction and to encourage placement officials in teacher education institutions to participate in a state-wide program, with the Department of Public Instruction serving as a clearing house for such activities.

ADE, LESTER K. *The Administration and Organization of the Distributive Education Program.* Bulletin 270 (Harrisburg: Department of Public Instruction, Commonwealth of Pennsylvania, 1939), 17 pp.

This bulletin explains some of the opportunities available to schools and communities and tells how classes may be organized and conducted in vocational education in distributive trades.

ADE, LESTER K. *The Teaching of Modern Foreign Languages in the Secondary Schools.* Bulletin 340 (Harrisburg: Department of Public Instruction, Commonwealth of Pennsylvania, 1939), 38 pp.

This bulletin is intended as an aid to teachers of modern foreign languages in secondary schools and considers point of view, objectives, methods, and materials in that field.

BROWNELL, WILLIAM A., KUEHNER, KENNETH G., REIN, WILLIAM C. *Learning as Reorganization: An Experimental Study in Third-Grade Arithmetic.* Duke University Research Studies in Education, Number 3 (Durham, N. C.: Duke University Press, 1939), 87 + xx pp.

The effects of two approaches were tested in an experiment in third grade arithmetic, in particular, in connection with a device designed to make clear the rationale of borrowing in subtraction; and the data seem to indicate advantages

for the experimental subjects who were taught the temporary device as compared with the control group who were taught in the usual manner, without the device.

BRYAN, ROY C., AND YNTEMA, OTTO. *A Manual on the Evaluation of Student Reactions in Secondary Schools* (Kalamazoo: Western State Teachers College, January, 1939), 56 pp.

This manual aims to acquaint the teacher with a reliable method of evaluating student reactions, and is devoted to discussions of procedures, reasons why teachers should evaluate student reactions through ratings, instructions on the use of the rating instrument, instructions on summarizing rating results, information on the interpretation of rating results, and answers to a number of questions concerning ratings.

CHARTERS, W. W. (Editor) *Educational Research Bulletin*, Vol. XVIII, No. 3 (Columbus: College of Education, Ohio State University, March 1, 1939), 29 pp.

This issue of the Bulletin is devoted to articles on "Costs per Pupil in Ohio City and Exempted-Village School Districts" and "Teaching Opportunities in 1938."

COCKING, WALTER D., AND GILMORE, CHARLES H. *Organization and Administration of Public Education.* Staff Study No. 2. Prepared for The Advisory Committee on Education (Washington: United States Government Printing Office, 1938), 183 pp.

The major purpose of this study is to determine the character of the organization and to evaluate the effectiveness of the administration of public education in the various States and local school units through a consideration of the development of the organization and administration of public education, the legal boundaries of public education, the place of education in the structure of government, state and local administration of education, interrelationships of local, state, and Federal governments, characteristics of educational organization and administration in the states and local units, and offers suggested improvements of state and local organization and administration of education.

FAHRNEY, RALPH A. *A Comparison of the Effectiveness for Learning of the Lecture-quiz Technique with the Classroom-Discussion Technique, in a Freshman-Sophomore Course in American History.* Research Report No. 36, Iowa State Teachers College (Cedar Falls: Bureau of Research, Iowa State Teachers College, March 25, 1939), 6 pp. Mimeographed.

The author studied the effectiveness of learning by lecture-quiz as compared to classroom-discussion techniques, and on the basis of data gathered from 36 matched pairs concludes that there is a strong probability that the lecture-quiz procedures are less successful than those of classroom-discussion.

FOSDICK, RAYMOND B. *The Rockefeller Foundation: A Review for 1938* (New York: The Rockefeller Foundation, 1939), 72 pp.

This bulletin sets forth a review of the activities of the Rockefeller Foundation for 1938.

GREENLEAF, WALTER J. *Individual Guidance* (Washington: Office of Education, Department of the Interior, 1939), 3 pp.

This pamphlet offers suggestions regarding where individual vocational counsel is offered.

GREENLEAF, WALTER J. *Occupations: Guidance Bibliography* (Washington: Vocational Division, United States Department of the Interior, 1939), 10 pp.

The purpose of this annotated bibliography is to help a student, parent, or counselor find a printed answer to questions that arise concerning the nature of particular occupations, practical training required, and satisfactions that accrue to those in the work.

GREENLEAF, WALTER J. *Programs of Guidance: Guidance Bibliography* (Washington: Vocational Division, United States Department of the Interior, 1939), 6 pp.

This pamphlet is an annotated bibliography of bulletins and pamphlets about State and city guidance activities, most of which are available in libraries.

HALVORSON, NELIUS O. *An Experiment Comparing the Effectiveness of Two Methods of Indicating Errors in Students' Themes.* Research Report No. 35, Iowa State Teachers College (Cedar Falls: Bureau of Research, Iowa State Teachers College, March 20, 1939), 25 pp. Mimeographed.

From data gathered from six sections of English I the author concludes that, on the basis of the gains made on the Essentials of English Test, the checking system is more effective than the use of symbols and abbreviations in indicating errors in students' themes.

JOHNSON, MARGUERITE WILKER. *Verbal Influence on Children's Behavior.* University of Michigan Monographs in Education, Number 1 (Ann Arbor: University of Michigan Press, January, 1939), 191 pp.

The author studies the relative effectiveness of 26 different types of verbal requests, remarks, and prohibitions on the behavior of 80 children, ages 2½ to 8½ years, paired as to age, sex, and intelligence, and concludes that the specific exceeded general instructions, pleasant requests were more advantageous than scolding, unhurried served better than hurried directions, positive requests exceeded negative requests and positive prohibitions were very much more effective than threats.

MACCOLL, SYLVIA HAZELTON. *A Comparative Study of the Systems of Lewin and Koffka with Special Reference to Memory Phenomena.* Contributions to Psychological Theory, No. 1, Serial No. 5 (Durham, N. C.: Duke University Press, 1939), 160 pp.

The author purposes to present a clear understanding of the fundamental postulates of the psychological systems of Lewin and Koffka, to exploit the systematic possibilities which each formulation seems to offer, and to test the explanatory value of the two systems with respect to a particular field of psychological investigation—the study of memory.

MEAD, A. R., AND OTHERS. *The Economic Status of White Teachers of Florida, 1934-35.* Bulletin of the Florida Education Association (Gainesville: Florida Education Association, 1939), 50 pp. Mimeographed.

This bulletin is devoted to a report of the Committee in charge of the Survey of Economic Status of Teachers in Florida.

MUDGE, EVELYN L. *Transfer of Training in Chemistry.* Johns Hopkins University Studies in Education, No. 26 (Baltimore: The Johns Hopkins Press, 1939), 76 pp.

On the basis of data gathered the author found that when raw scores are considered there is some evidence of a significant temporary transfer from theory to

practice in the field of chemistry at the high-school level.

PORTEUS, S. D. *Psychological Service in Hawaii: The Work of the University Clinic.* University of Hawaii Occasional Papers, No. 37, Bulletin of the University of Hawaii, No. 5 (Honolulu: University of Hawaii, 1939), 17 pp.

This bulletin is devoted to a discussion of the work of the (Psychological) Clinic at the University of Hawaii.

SPRINGER, N. NORTON. *A Further Study of the Psychoneurotic Responses of Deaf and Hearing Children.* Reprint from November, 1938, *The Journal of Educational Psychology* (New York: N. Norton Springer, 1938), 7 pp.

The purpose of the study was to determine whether deaf and hearing children differ from each other in their manifestations of mal-adjusted behavior, as measured by their psychoneurotic responses on the Brown Personality Inventory for Children.

SKODAK, MARIE. *Children in Foster Homes: A Study of Mental Development.* University of Iowa Studies in Child Welfare, No. 364 (Iowa City: University of Iowa, January 1, 1939), 156 pp.

The purpose of this study is the investigation of the mental development of children placed in foster homes and the examination of relationships between the mental development of the children and various factors characterizing the true and foster parents and the child's own early development.

SMITH, HENRY LESTER, AND EATON, MERRILL THOMAS. *Two Studies in Arithmetic.* Bulletin of the School of Education, Indiana University, No. 2 (Bloomington: Bureau of Coöperative Research, School of Education, University of Indiana, March, 1939), 91 pp.

The issue is devoted to articles on "A Diagnostic Study of Efficiency in Arithmetic," and "Teaching the Number Facts of Addition."

EDUCATIONAL ADMINISTRATION AND SUPERVISION

HARVEY, O. L. "Urban and Rural Enrollment Trends," *The Elementary School Journal,* XXXIX, (March, 1939), pp. 532-538.

The author offers a consideration of urban-rural enrollment differences by states and grades which suggests that enrollments in urban areas have, in general, reached their peak in the elementary schools and are approximating the peak in high schools; while in rural areas improvement in grading and promotion is still taking place in the first two grades, and expansion is taking place at the secondary school level.

MAY, MARK A. "Ten Tests of Measurement," *The Educational Record,* XX, (April, 1939), pp. 200-220.

The author discusses ten proposed tests of measurement, based upon the thesis that a test is a critical experiment or operation that determines a relationship, while a measurement is an operation that determines an amount.

NORTHWAY, RUTH M. "What Is the Relationship of Pre-Service to In-Service Education of Teachers?," *Educational Administration and Supervision,* XXV, (February, 1939), pp. 141-145.

The author discusses the relationship between pre-service and in-service education of teachers and concludes that although the in-service program will retain its practical nature, the upgrading of the profession depends on a union of effort between these two types of service.

WHITE, KENNETH B. "The Selection of Prospective Teachers," *Educational Administration and Supervision*, XXV (February, 1939), pp. 120-126.

The author discusses the plan for selection of prospective teachers employed by the Paterson, New Jersey, State Teachers College which is based upon a point score for five factors: physical fitness, desirable personality, professional attitudes, the mastery of the elements of a general education, and a satisfactory college record for the first two years.

WOELLNER, ROBERT C. "Professional Training Required for an Initial Secondary-School Teacher's Certificate," *The School Review*, XLVII (April, 1939), pp. 280-283.

The author discusses the amount and the specific courses in education necessary in order to obtain a state certificate to teach throughout the United States.

CURRICULUM CONSTRUCTION

GOODENOUGH, FLORENCE L. "Selected References on Preschool and Parental Education," *The Elementary School Journal*, XXXIX (March, 1939), pp. 539-549.

This annotated bibliography covers the period from December 1, 1937, to December, 1938, and is devoted to the most important publications of the year in this field.

MANWILLER, C. E. "Differences in Emphasis on Experiences and Concepts in Readers," *Pittsburgh Schools*, XIII (January-February, 1939), pp. 65-98.

On the basis of data gathered from fifteen elementary schools in an attempt to analyze two readers for the experiential background of concepts which a pupil should know to understand the context, to check the number and frequency of concepts understood, and to study the relationship between mental age and concepts understood, the author concludes that children are very directly affected by the types of experiences which are samples for beginning readers.

MEAD, VERA OLBERT. "What Abilities Are Stressed in Work Books in History?," *The School Review*, XLVII (April, 1939), pp. 284-289.

The author analyzed 43 work books in History according to the abilities represented and found that the learning exercise of "collecting data" was present in 42.3 percent of the 23,840 exercises tabulated.

TERRY, PAUL W. "Selected References on the Extra-Curriculum," *The School Review*, XLVII (April, 1939), pp. 299-306.

The author presents an annotated bibliography of 49 references on the extra-curriculum.

WASHBURNE, CARLTON. "The Teaching of Linear Measure, Square Measure, and Time," *The Elementary School Journal*, XXXIX (March, 1939), pp. 509-523.

This article presents the results of the Committee of Seven Experiments and Recommendations for Curricular Placement and gives the recommended curriculum for measurement in terms of mental-age levels of 7 to 8, 8 to 9, 9 to 10, 10 to 11, 11 to 12, 12 to 13, 13 to 14, and 14 and higher.

PSYCHOLOGY OF LEARNING AND TEACHING

WORD, AUBREY H., AND DAVIS, ROBERT A. "Acquisition and Retention of Factual Information in Seventh-Grade General Science During a Semester of Eighteen Weeks," *The Journal of Educational Psychology*, XXX (February, 1939), pp. 116-125.

This investigation, which was conducted with three sections of seventh-grade general science pupils, involved administering at regular intervals a series of specially designed objective tests, and deals with the ability of pupils to recall specific factual information as evidenced by their responses to simple completion items.

PUPIL GUIDANCE, WELFARE AND DEVELOPMENT

EBERHART, WILFRED. "Evaluating the Leisure Reading of High-School Pupils," *The School Review*, XLVII (April, 1939), pp. 257-269.

The author presents a plan for evaluating the leisure reading of high-school pupils which is based upon the maturity level technique.

FINCH, F. H., AND ODOROFF, M. E. "Sex Differences in Vocational Interests," *The Journal of Educational Psychology*, XXX (February, 1939), pp. 151-156.

On the basis of data collected by the administration of the Strong Vocational Interest Blank for men to a total of 467 individuals the author concludes that there are certain differences between the measured vocational interests of boys and girls of high-school age.

RISEN, MAURICE L. "Relation of Lack of One or Both Parents to School Progress," *The Elementary School Journal*, XXXIX (March, 1939), pp. 528-531.

Of the 1,625 pupils who answered the author's questionnaire, about one out of seven lack one or both parents in the home; and it appears, in the school studied, that the lack of one or both parents in the home affects the child's intelligence quotient unfavorably, increases the amount of overageness, increases the number of failures in school subjects and decreases the likelihood of the child's becoming a leader in the school community, increases his chance of becoming a special problem case for the school counselor, and has some slight effect on health.

STATISTICS, MEASUREMENTS, AND SCIENTIFIC TECHNIQUES

GATES, ARTHUR I. "An Experimental Evaluation of Reading-Readiness Tests," *The Elementary School Journal*, XXXIX (March, 1939), pp. 497-508.

On the basis of data gathered from pupils in Grade I on tests of picture interpretation and directions, word-matching, word-card recognition, rhyming, blending, ability to read the letters of the alphabet, and sounding the letters, the author concludes that: the tests which measure reading progress two or three weeks after entering school, give, on the whole, satisfactory predictions of reading ability at mid-year, the predictive value of a particular test varies with the teaching method, and the better a teacher adjusts her work to a pupil's special abilities, the better the prediction made by the test.

NEW TESTS

California Test of Personality—Elementary, Form A.: A Profile of Personal and Social Adjustment, by Louis P. Thorpe, Willis W. Clark, and Ernest W. Tiegs. Los Angeles: California Test Bureau, 1939.

This test of 144 items, which is suitable for grades four to nine inclusive, attempts to measure six components of self-adjustment based upon feelings of personal security and six components of social adjustment based upon feelings of social security. Reliability coefficient based upon 334 cases is .933. Profile scoring. Percentile Norms for each part score, for total score, and for sub-section scores given. Manual.

RESEARCH NEWS and COMMUNICATIONS

Address all research news and communications to Carter V. Good, Teachers College, University of Cincinnati, Cincinnati, Ohio.

Sociological Research at New York University.—A unique characteristic of the research program carried out in the Department of Educational Sociology of the School of Education, New York University, is the close integration between research, classroom work, and practical community programs. Research, whether specially financed by foundations or a part of the regular academic program, has provided an opportunity for valuable experience and training for the students in the department. Not only have the students been given an opportunity to participate in important investigational projects, but they have also had the chance to work in the community programs which have been designed to apply the research findings to the solution of practical problems. In other words, research results have been given their full importance in the classroom and have been carried into the community.

This relationship is illustrated in various major projects of the department such as those in the field of health education under the direction of E. George Payne; studies in race relations under Francis J. Brown; the studies carried on in the Clinic for Gifted Children under the direction of Harvey W. Zorbaugh; the Boys' Club, Motion Picture, and Lower West Side Studies carried out under the supervision of Frederic M. Thrasher; the community investigations of Julius Yourman; and the studies of Leonard Covello, Joseph S. Roucek, Rachel Davis-DuBois, and Julius B. Maller in the field of cultural and community backgrounds and intercultural education.

E. George Payne has long been active in the field of health education. The earlier researches included safety education, the health education curriculum and controlled experiments in techniques of health instruction. A study now under way is the relationship between the health education program and the health needs in New York City—a comparison between two health center districts, presenting the health conditions of the areas, economic and social factors involved, and the extent to which the specific curriculum is related to these factors.

The studies under the direction of Professor Brown include a case-study approach to social maladjustment in a mixed school of Negroes and whites, a comparison of Negro and white children in five elementary schools in Jersey City, the nature of the relationship between education and careers of Negroes living in Manhattan covering the years 1929-1937, and changing ideologies of peace organizations in the United States from 1919-1939.

Through the Clinic for Gifted Children, case records have been accumulated over the last seven years. Such records include the results of testing, conferences with the child and parents, recommended adjustments, and follow up. Several specific research projects have grown out of the work and the clinic. Other studies in the same field include "Guidance in Education: A Program for School and

Community'' by Rhea K. Boardman of the department faculty.

The studies of social and community backgrounds have included a variety of communities in the New York metropolitan area; among them have been East Harlem, the Lower West Side, and areas in Queens, Brooklyn, and the Bronx, all in New York City; Darien, Connecticut; Millburn, Newark, Jersey City, Paterson, Madison, Summit, New Haven, and other New Jersey areas; and Yonkers, Hastings-on-Hudson, and other communities in New York State.

Other studies under the auspices of the department include a survey of individual interests and needs as a basis for adult education, state supervision relative to the transportation of school children in Delaware, Protestant church trends of New York City from 1900 to 1936, behavior deviations from normal of problem and non-problem children, and college-community interactional patterns.

In addition to these research projects, which are carried on by doctoral candidates in the department, all of the members of the department are coöperating in investigations outside of the university. The fields for such research include delinquency, atypical children with special reference to sightseeing classes and the hard-of-hearing child, the Motion Picture Research Council, and the Commission on Intercultural Education.

Research at West Virginia University.—The Bureau of Instructional Research at West Virginia University, set up under the directorship of Charles A. Drake during the past year, has been assured of continued existence through the next biennium in a recent appropriation by the state legislature. The bureau acts as a fact-finding agency for the administration and faculty, working in close coöperation with the University Committee on Instructional Policies and Practices.

The major project during the past year has been a study in coöperation with members of the biology department, designed to improve the quality of the examining process and to reduce the amount of clerical labor which makes such heavy demands upon professorial time. It is planned to extend this study to several other departments during the next two years.

With the increased facilities provided in the new budget, a number of other studies of faculty and student personnel are contemplated, designed to afford a sound basis for changes in institutional policies.

Rockefeller Foundation, 1938.—During 1938 the Rockefeller Foundation appropriated a total sum of over $15,000,000. Of this amount, speaking in terms of rough classifications, $3,800,000 was given to the medical sciences, $3,800,000 to the social sciences, $3,000,000 to the natural sciences, $2,500,000 to public health, $1,000,000 to the humanities, and $300,000 to rural reconstruction in China. The Foundation's income during 1938 amounted approximately to $7,000,000. In appropriating $15,000,000 it was necessary, therefore, not only to use up the balance carried over from earlier years, but to dip into the principal fund to the extent of $3,755,000. Twenty-five percent of the money given went to foreign countries, and the remainder, 75 percent, was for work in the United States.

Except in the field of public health, the Foundation is not an operating organization. It conducts no researches of its own. Its activities are confined to grants to other agencies—universities, laboratories, and research institutes—and

to the training, through fellowships, of competent personnel in the various fields of knowledge.

The president of the Foundation is Raymond B. Fosdick.

The Master's Degree.—P. W. Stansbury of the University of Toledo completed during 1938 at Ohio State University a doctorate dissertation entitled "The Master's Degree for Secondary School Teachers," which should be of interest to higher institutions, graduate students, and teachers.

The purpose of the investigation was to determine the meaning and function of the Master's degree in the program for the education of secondary school teachers. The various practices and their underlying philosophies were examined to determine the possibility of using the degree more directly for the improvement of teaching. A study of the responsibility of the school to the social order led the writer to assume the position that a democratic social order is best adapted to contemporary American civilization and that the function of educative material is instrumental rather than an end in itself.

The data of the study were collected from four sources: (1) the literature (historical studies and contemporary discussions bearing upon the various problems of the Master's degree), (2) visits to universities where conferences with the professors who direct graduate study were held, (3) personal interviews with teachers in the public schools of Toledo, Ohio, who had earned their Masters' degrees since 1925, and (4) questionnaire studies of the opinions of high school teachers in all of the larger cities.

The more significant conclusions were: (1) The vast majority of recipients of Masters' degrees have had experience as teachers, have done their work in part-time study or summer sessions, and have specialized in either the subject they are teaching or in education. These facts give a distinctly vocational cast to the degree. (2) The work for the Master's degree, as now generally conceived, is not well adapted to the improvement of teaching in a democratic society. (3) The graduate school can enhance its value for the education of teachers by: (a) frank recognition of the changing composition of the student body and the professional motive that dominates the quest for advanced degrees, and (b) adjusting its offerings and requirements to the needs and interests of teachers.

The recommendations are: (1) That a lenient policy of admission be adopted and that greater attention be given to the development of programs of individual guidance. (2) That a student-centered curriculum be established which emphasizes three objectives: (a) the advancement of knowledge, (b) the acquisition of skills, and (c) the development of research techniques. This recommendation implies the clarification of the meaning of the "graduate course" and a reinterpretation of the function of the thesis. (3) That further efforts be made to increase the reliability and validity of the techniques of evaluation, course grades, professors' estimates, and comprehensive and oral examinations.

Research Methods in Doctors' Theses.—Gertrude J. Taber completed during 1938 at the University of Pittsburgh a doctoral dissertation entitled, "A Critical Analysis of Research Techniques in Five Fields of Education As Presented in Doctors' Dissertations." The problem of this investigation has three aspects: (1) What developments have taken place with respect to the problems and general methods employed in Doctors' dissertations in the fields of curriculum, methods

of teaching, learning, guidance, and philosophy of education? (2) What tendencies may be observed in the development of educational research from the date of the earliest dissertations to 1934? (3) Have critiques of the procedures of educational research been accompanied by corresponding progress in methods?

To determine the procedures employed, 416 dissertations from fifteen universities were analyzed, and the techniques were classified into eight groups. Two checks on the reliability of the original analysis indicated a consistency of over 80 percent. As a basis for evaluation, 204 critical articles, which appeared in educational journals between 1893 and 1934 and dealt with methods of research, were read.

In the chapters on the five fields of education the discussion centers about the recurrent problems observed in the dissertations in each field. The data and treatment used in the solution of each problem are discussed as they appeared in the following periods: 1890 through 1904; 1905 through 1919; and 1920 through 1934.

In the later chapters the development of each of fifty-two specific techniques is traced and evaluated. Since so large a number of individual procedures could not be handled with any degree of convenience, the question of grouping them into larger units arose. The final classification considers together techniques which tend to appear most frequently in the same type of study with the understanding that many other techniques may contribute to the same general procedure.

The most frequent problems and general methods in the several fields discussed in the first part of the study are as follows: the analytical treatment of materials of the curriculum; experimental study of methods; analytical, distributive, and relational investigations of difficulties and mental ability; descriptive reports of guidance; and philosophical consideration of the aims of education.

The vast majority of investigations fall far short of the standards established by critical writers. The statement of the problem, choice of methods for its solution, and the use of check groups are the most nearly satisfactory procedures. The least satisfactory are the lack of consideration of other research in the field, and the use of statistical concepts without satisfying the fundamental considerations underlying them. Other points of weakness are failure to obtain equivalent groups and to control non-experimental factors, use of invalid measuring instruments, and lack of measures of reliability.

Chicago Placement Testing.—In February, 1939, an English placement test was administered to over nineteen hundred entering students in the Chicago City junior colleges. The answer sheets were scored on the electric scoring machine and the results were reported to the colleges within twenty-four hours, so that the students could be registered in English 101A or English 101B according to their abilities. The English placement test groups the students so that instruction may be adapted better to individual differences.

Validity of the Stanford Scientific Aptitude Test.—M. V. Marshall of Franklin and Marshall College reports a study of the relationship between students' marks on the Stanford Scientific Aptitude Test and other measures of their scientific aptitude and ability. The investigation involved 18 seniors who were majoring in either physics, chemistry, or biology. They were definitely selected so as to include both good and poor students. Their scientific aptitude and ability were measured by the following means: the scores on

the Stanford Scientific Aptitude Test; the composite marks in physics, chemistry, and biology; the combined marks in the three sciences; a composite ranking by science professors on the basis of aptitude for scientific thinking and research; and the percentile ranking of 12 of these students on the medical aptitude test which is given annually by the American Medical Association to prospective students for entrance to medical colleges. The data for each of these measures were transmuted to ranks from which the following coefficients of correlation were computed:

	rho	r	P.E.$_r$
Science aptitude and professors' ratings..	0.83	0.84	.05
Science aptitude and all-science marks....	0.77	0.78	.065
Science aptitude and chemistry marks....	0.79	0.80	.06
Science aptitude and physics marks.....	0.75	0.77	.07
Science aptitude and biology marks.....	0.69	0.71	.09
Professors' ratings and all-science marks....	0.90	0.91	.03
Science aptitude and medical aptitude....	0.87	0.88	.05

A number of conclusions may be drawn: (1) Correlations between the science aptitude test and science marks range from 0.71 (biology) to 0.80 (chemistry). The test does discriminate with a high degree of accuracy between students who do well in science and those who do less well. (2) This discrimination, for the three science subjects, is sharpest for chemistry and least sharp for biology. (3) The professors who rated the students had had nearly four years of intimate contact with them. The science aptitude test correlates 0.84 with these ratings. Moreover the test correlates 0.78 with all-science marks on the basis of a one-hour contact with the students. Professors' ratings, based on extended acquaintance with the students, correlate 0.91 with all-science marks. (4) The Stanford Scientific Aptitude Test and the Medical Aptitude Test appear to be measuring much the same ability or group of abilities.

Two criticisms or limitations of this study are suggested. The extreme smallness of the group studied lowers the reliability of the findings. This investigation would be a more reliable study of the predictive value of the science aptitude test if the test had been given to the students before they began their intensive study of science.

Tenure in Louisiana.—W. H. Miller has completed (1938) at Louisiana State University a doctorate dissertation entitled, "Tenure of Teachers in Louisiana Elementary Schools." The purpose of this study is to determine the tenure of elementary school teachers of Louisiana in their present positions and the relation of this tenure to certain other factors in the teaching situation, as well as to study their total teaching experience in relation to the factors associated with tenure in their present positions. The factors considered in relation to tenure are: status of the school, native parish, home parish, salaries, number of dependents, marital status, training, college where trained, number of positions held, number of parishes where employed, size of school, where at present employed, and size of community. The treatment of this study is limited to 1,603 white elementary teachers from 33 parishes of Louisiana, the information having been secured by means of a questionnaire administered by the writer or by some of his associates.

Some of the conclusions follow: The women teachers of the state have longer tenure in their present positions than men,

and teachers in approved schools have somewhat longer tenure than those in non-approved schools. Teachers employed at their home addresses have longer tenure than those employed away from their home addresses. Salary is an important factor in tenure, but there seems to be no definite relationship between number of dependents of a teacher and tenure. Married teachers have longer tenure than single teachers. The training of teachers seems to have no bearing on their tenure. Among the women teachers, the number of positions held and number of parishes in which previously employed seem to affect the tenure in present positions, but among the men teachers such factors are insignificant. The work which teachers are at present doing has but slight bearing on tenure, and the same conditions prevail where size of community or size of school is concerned.

Pupil Transportation in Ohio.—C. D. Hutchins completed at Ohio State University in 1938 a doctorate thesis entitled, "The Distribution of State Funds for Pupil Transportation."

Generally the cost of education in the United States has been paid from local school district revenues. In recent years, however, legislatures have been providing state revenues for education and arranging for the distribution of such funds to local districts for the equalization of cost and opportunity. In twenty-four state plans, adopted for the distribution of funds, the cost of pupil transportation is recognized. The methods of recognizing the local cost of pupil transportation vary widely, but in all except Delaware and North Carolina it is necessary for the state office of education to form some estimate of a reasonable local cost, and in these two systems the state establishes and pays the full cost.

This trend in financing education requires the establishment of a procedure for the determination of a reasonable local cost of pupil transportation. The development of such a technique for Ohio was accepted as the primary purpose of the study.

The data used included report blanks pertaining to 7,366 of the 7,519 bus routes which operated in Ohio during the 1936-37 school year. The report blanks supplied fifty-one items of information regarding each bus route. This information was used in testing the relative significance of the many factors which are related to the cost of pupil transportation.

Three factors beyond the control of the board of education—(1) number of pupils transported, (2) density, and (3) condition of the roads—were found to be of greater significance than the others tested and were used in the development of a regression equation for the calculation of a correct cost based upon these three factors.

Further testing of managerial factors indicated that six of them including, (1) pupils transported per bus, (2) average investment per pupil, (3) number of trips per bus, (4) percent of capacity used, (5) percent of busses owned by the board, and (6) percent of forward facing seats, had greater influence upon the cost of pupil transportation than the others tested. These six were therefore selected and data relating to their effectiveness in producing changes upon the cost were used in adjusting the cost for a district as calculated by the regression equation. The adjusted costs calculated in this manner were compared with the actual costs for the 1937-38 school year and the coefficient of correlation was found to be $+.770$ with a probable error of $\pm.014$.

The application of the procedure to all the districts in Ohio for two years has indicated the following advantages:

a. The amount determined for the district is accurately fitted to the local program, since it recognizes the three most significant uncontrolled factors and makes adjustments for the six most influential managerial factors.

b. A small number of data are required from each school district. Only ten items of information need be reported. The application of the procedure and the calculation of a reasonable cost for any district require only two or three minutes.

c. The plan encourages local responsibility, since it produces a total amount for the district for one year and permits the local board to determine the wages of individual bus drivers. If more than the approved total is needed, the additional cost can be supplied from local revenues.

d. It is flexible in that other managerial factors may be added or some may be eliminated by the state department of education at any time without changing the total amount spent for pupil transportation. This enables the department constantly to reappraise the transportation program and to make changes which will obtain safe, comfortable, efficient, and economical transportation service.

After a reasonable cost of pupil transportation has been established for each district, the figure may then be used in connection with any statutory provision for the recognition of the cost of transportation, whether the full cost or only a part of the cost is to be paid from state funds.

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